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MOLECULE TYPE:
DESCRIPTION:
FRAGMENT TYPE:
FEATURE:
                                                                                                                                                                                                                                                                                                                                             FILING DATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH:
Sequence 10345, A
Sequence 10346, A
Sequence 9243, Ap
Sequence 34, Appl
Sequence 4, Appli
Sequence 919, App
Sequence 14517, A
Sequence 14517, A
                                                                                                                                                                                                                                                                                                                                      2, Appli
4, Appli
4, Appli
6, Appli
4, Appli
3, Appli
19967, A
19967, A
19967, A
19967, A
1997, A
                                           April 1, 2005, 09:16:13 ; Search time 6.59898 Seconds (without alignments) 565.610 Million cell updates/sec
                                                                                                                                                                                                                                                          Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                     Sequence 1996
Sequence 8, P
Sequence 8, P
Sequence 7, P
Sequence 7, P
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Sequence 6,
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Sequence 4,
Sequence 3,
                                                                                                                                                                                                                                                                                                                         Sequence 2,
                                                                                                                                                                                                                                                                                                                                             Sequence 4,
                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                Sequence 2
                                                                       US-09-891-064A-2_COPY_89_138
293
1 WDRGYGTSLLGGSVGYPYGG......GYGYGYGYGYGYTDPRAAK
                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
Sequence
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                                                                                                                                                                                                   Issued Patents AA:*

(cgn2_6/ptodata/1/iaa/5A_COMB.pep:*

(cgn2_6/ptodata/1/iaa/5B_COMB.pep:*

(cgn2_6/ptodata/1/iaa/6A_COMB.pep:*

(cgn2_6/ptodata/1/iaa/ReCOMB.pep:*

(cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*

(cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
     GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd
                                                                                                                                                                                                                                                                                                                       US-09-248-796A-14517
US-09-270-767-42771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-270-767-43200
US-09-910-430-34
US-09-575-574-4
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                                                                                                                                    Total number of hits satisfying chosen parameters:
                                                                                                                        513545 segs, 74649064 residues
                                                                                                                                                                                                                                                                                      SUMMARIES
                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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seq length: 200000000
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Maximum DB
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No.
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11035, A
11036, A
54, Appli
20, Appli
43241, A
8152, Ap
40578, Ap
55794, A
                                                         sednence sed
US-09-949-016-6628

US-09-949-016-11035

US-09-513-999C-5827

US-09-680-175-4

US-09-680-175-4

US-09-270-767-4324

US-09-270-767-4324

US-09-949-016-8152

US-09-538-092-844

US-09-538-092-844

US-09-949-016-8155

US-09-949-016-8792

US-09-9431-887-21

US-09-431-887-21

US-09-431-887-21

US-09-431-887-21

US-09-431-887-21

US-09-431-887-21
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PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER:
PILING DATE: March 14, 1997
APPLICATION NUMBER: U.S. 60/013,625
ATTONNEY, AGENT INPORMATION:
NAME: MARY M. KRINBKY
REGISTRATION NUMBER: 32423
REFERENCE/DOCKET NUMBER: 1751-P0016B.P
TELECOMMUNICATION INPORMATION:
TELEPHONE: 203-324-6155
TELEFAX: 203-327-1096
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" 1.44 Mb diskette
COMPUTER: IBM PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STATE: Connecticut
COUNTRY: United States of America
ZIP: 06520-8057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC
OPERATING SYSTEM: MS DOS
SOFTWARE: WORD Proceesing
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/142,732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polypeptide
complete sequence
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
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TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: amino acid
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TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: amino acide TOPOLOGY: literal
             ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 521 amino acids
amino acid
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         , MOLECULE TYPE: protein US-09-197-503-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  USA
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                                                                Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
100.0%; Score 293; DB 4; Length 522;
Best Local Similarity 100.0%; Pred. No. 7.3e-24;
Matches 50; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747
CITY: Falls Church
STATE: VA
                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747
CITY: Falls Church
STATE: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:

CURRENT APPLICATION DATA:

APPLICATION NUMBER:

FILING DATE: 05-NOV-1997

CLASSIFICATION: 536

ATTORNEY/AGENT INFORMATION:

NAME: FARACI, C. JOSEPH

REGISCOMMUNICATION NUMBER: 32,350

REFERENCE/DOCKET NUMBER: 0425-0660P

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELEPAX: (703) 205-8000

TELEPAX: (703) 205-8000

INFORMATION FOR SEQ ID NO: 2:

SEQUENCE CHARACTERISTICS:

LENGTH: SAME CATARACTERISTICS:

LENGTH: Amino acid
                                                           Query Match 100.0%; Score 293; DB 3; Best Local Similarity 100.0%; Pred. No. 7.3e-24; Matches 50; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY: USA
ZIP: 22040-0747
COMPUTER READABLE PORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                              Sequence 2, Application US/08945826
Patent No. 6489460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/09197503
Patent No. 6559286
human occludin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY: linear
MOLECULE TYPE: protein
NAME/KEY:
    ; NAME/KEY:
US-09-142-732-2
                                                                                                                                                                                                                                                          RESULT 2
US-08-945-826-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-08-945-826-2
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Patent No. 6489460

GENERAL INFORMATION:

APPLICANT: TSUKITA, Shoichiro

TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN

TORRESPONDENCE ADDRES:

ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP

STREET: P.O. Box 747

CITY: Falls Church

STATE: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

SOFTWARE: PATENTIN Release #1.0, Version #1.30

CURRENT APPLICATION NUMBER: US/08/945,826

FILING DATE: 05-NOV-1997

CLASSIFICATION: 536

ATTORNEY/AGENT INFORMATION:

NAME: FARACI, C. JOSEPH

REGISTRATION NUMBER: 0425-0660P

TELECOMMUNICATION INDER: 0425-0660P
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/197,503
FILING DATE:
                                                                                                                                                                                  CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION DATA:
APPLICATION DATA:
FILING DATE: 05-NOV-1997
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. Joseph
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEPRAY: (703) 205-8000
TELEPRAY: (703) 205-8050
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
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ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            73.0%;
80.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
LENGTH: 521 amino acids
TYPE: amino acid
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Best Local Similarity 80.4%
Best Local 41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: protein US-08-945-826-6
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                                                                                   USA
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                                                                                       COUNTRY:
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                                                                                                                                                                                               89 WDRGYGTGLMGGSIGYPY-GSGFGSYGTGYGYGYGFGYGYGGYTDPRAAK 137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1;
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                                                                                                                                                                       1 WDRGYGTSLIGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAK 50
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                                                                                     Query Match 89.6%; Score 262.5; DB 4; Length 521; Best Local Similarity 88.0%; Pred. No. 1.4e-20; Matches 44; Conservative 4; Mismatches 1; Indels 1.
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Pred. No. 1.4e-20;
4; Mismatches 1; Indels 1;
                                                                                                                                                                                                                                                                                                        Sequence 4. Application US/09197503
; Sequence 6. Application US/09197503
; Patent No. 6552286
; GENERAL INFORMATION:
    APPLICANT: TSUKITA, Shoichiro
    TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
    NUMBER OF SEQUENCES: 8
; CORRESPONDENCE ADDRESS:
    ADDRESSEB: Birch, Stewart, Kolasch & Birch, LLP
    STREET: P.O. Box 747
; CITY: Falls Church
    STATE: VA
    COUNTRY: USA
    COUNTRY: USA
    COMPUTER: RADABLE FORM:
    MEDIUM TYPE: Ploppy disk
    COMPUTER: IBM PC compatible
    OPERATING SYSTEM: PC-DOS/MS-DOS
    SOFTWARE: PatentIn Release #1.0, Version #1.30
    CURRENT APPLICATION DATA:
    RAPLICATION NUMBER: US/09/197,503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 6, Application US/08945826
Patent No. 6489460
GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CLASSIFTCATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/945,826
FILING DATE: 05-NOV-1997
ATTORNEY/AGENT INFORMATION:
NAME: PARACI, C. Joseph
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              89.6%;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE CHARACTERISTICS:
LENGTH: 521 amino acida
TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 88.0%
Matches 44; Conservative
                     ; MOLECULE TYPE: protein US-08-945-826-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY: linear
MOLECULE TYPE: protein
      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
TOPOLOGY:
                                                                                                                                                                                                                                                                                                  US-09-197-503-4
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Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGY-GYGYGYTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 521;
COMPUTER READABLE FORM:

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,826
FILING DATE: 05-NOV-1997
CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. JOSEPH
REGISTRATION NUMBER: 32,350
REGISTRATION NUMBER: 32,350
REGISTRATION NUMBER: 32,350
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 205-8000
TELEPHONE: (703) 205-8050
INFORMATION FOR SEQ ID NO: 6:
CROMTENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-09-197-503-6
; Sequence 6, Application US/09197503
; Patent No. 6559286
; GENEAL INFORMATION:
; APPLICANT: TSUKITA, Shoichiro
; TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: USA
ZIP: 22040-0747

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/197,503
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Score 214; DB 4; I; Pred. No. 2.2e-15; 1; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch,
STREET: P.O. Box 747
CITY: Palls Church
STATE: VA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 97
ATTORNEY/AGENT INFORMATION:
NAME: PRARAI, C. 408 eph
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECHONE: (703) 205-8000
TELEPHONE: (703) 205-8050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0425-0660P
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GENERAL INFORMATION:
APPLICANT: Christina M. Anderson
APPLICANT: Christina M. Van Itallie
TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors
ITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
ADDRESSEE: Section of Digestive Diseases
ADDRESSEE: Department of Internal Medicine
STREET: 333 Cedar Street, LCI 105
CITY: New Haven
STREET: Connection
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
  Gaps
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  Indels
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ments
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0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFFCATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/US97/05809
FILING DATE: March 14, 1997
APPLICATION NUMBER: U.S. 60/013,625
FILING DATE: March 15, 1996
ATTORNEY/AGENT INFORMATION:
NAME: Mary M. Krinsky
REGISTRATION NUMBER: 32423
REGISTRATION NUMBER: 31423
REFERENCE/DOCKET NUMBER: 1751-P0016B.P
TELECOMUNICATION INFORMATION:
TELECOMUNICATION INFORMATION:
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US-09-248-796A-19967
; Sequence 19967, Application US/09248796A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: United States of America ZIP: 06520-8057
COMPUTER READALE FORM: MEDIUM TYPE: 3.5" 1.44 Mb diskette COMPUTER: IBM PC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC
OPERATING SYSTEM: MS DOS
SOFTWARE: WORD PROCESSING
CURRENT APPLICATION DATA:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 DRGYGTSLLGGSVGYPYGGSGFG 24
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                                                                                   2 SYGSGYGYGYGYGYGGYTDPR 24
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                                                                                                                                                                       US-09-142-732-3
; Sequence 3, Application US/09142732
; Patent No. 6252045
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Best Local Similarity 100.(
Matches 23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEFAX: 203-327-1096
INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
    23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: amino acid
STRANDEDNESS: sin
TOPOLOGY: linear
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-09-142-732-3
      Matches
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APPLICANT: James M. Anderson
APPLICANT: Christina M. Van Itallie
APPLICANT: Christina M. Van Itallie
TITLE OF INVENTION: Human Occludin, Its Uses and
TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors
NUMBER OF SEQUENCES: 6
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                       ű,
                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                    89 WDRGYGTGLFGGSLNYPY--SGFG-YGGGYGGGYGGYGYGYGYGYTDPRAAK 136
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                                                                                                                                                                                                                       4
                                                                                                                                                                           Length 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          48.1%; Score 141; DB 3; Length 24; 100.0%; Pred. No. 6.9e-09;
                                                                                                                                                                                                                   5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ) OTHER_INFORMATION: construct used in experi-
) OTHER INFORMATION: ments
US-09-142-732-4
                                                                                                                                                                         Score 214; DB 4;
Pred. No. 2.2e-15;
1; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Yale University Medical School
ADDRESSEE: Section of Digestive Diseases
ADDRESSEE: Department of Internal Medicine
STREET: 333 Cedar Street, LCI 105
CITY: New Haven
STATE: Connecticut
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
CLASSIPTCATION:
PRIOR APPLICATION:
APPLICATION DATA:
APPLICATION NUMBER: PCT/US97/05809
FILING DATE: March 14, 1997
APPLICATION NUMBER: U.S. 60/013,625
FILING DATE: March 15, 1996
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STATE: Connecticut
COUNTY: United States of America
ZIP: 06520-8057
COMPUTER READABLE FORM:
MEDIUM TYPE: 3.5" 1.44 Mb diskette
COMPUTER: IBM PC
COMPUTER: IBM PC
COMPUTER: More Processing
SOFTMARE: Word Processing
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/142,732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DESCRIPTION: peptide
FRAGMENT TYPE: synthetic peptide
                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 4, Application US/09142732
Patent No. 6252045
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE/DOCKET NUMBER: 17
TELECOMMUNICATION INFORMATION:
TELEPHONE: 203-324-6155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NAME: Mary M. Krinsky
REGISTRATION NUMBER: 32423
                                                                                                                                                                           73.0%;
80.4%;
  INFORMATION FOR SEQ ID NO: (SEQUENCE CHARACTERESTICS: LENGTH: 521 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS: LENGTH: 24
                                                                                                                                                                                                                   41; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS: single TOPOLOGY: linear
                                                                                   TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-197-503-6
                                                                                                                                                                         Query Match
Best Local Similarity
Matches 41; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          amino acid
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Best Local Similarity
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APPLICANT: MULSHINE, JAMES, L.
APPLICANT: MULSHINE, JAMES, L.
APPLICANT: TOCKMAN, MELVYN, S.
TITLE OF INVENTION: AN EPITHELIAL PROTEIN AND
TITLE OF INVENTION: DAT THEREOF FOR USE IN EARLY CANCER DETECTION
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORCAN & PINNEGAN, L.L.P.
STREET: 345 PARK AVENUE
CITY: MEW YORK
STATE: NEW YORK
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 8, Application US/09542552

Patent No. 6500625

GENERAL INFORMATION:
APPLICANT: MULSHING, JAMES, L.
TITLE OF INVENTION: AN EPITHELIAL PROTEIN AND
TITLE OF INVENTION: DNA THEREOF FOR USE IN BARLY CANCER DETECTION
                                     .
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                                                                                                           249 GYG----GGRGGYGGGPGYGNQGGGYGGGYDNYGGGNYGSGNYND 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   249 GYG----GGRGGYGGGBGYGNQGGGYGGGYDNYGGGNYDS 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 341;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGY----GYGYGYGYTD 45
              1 Similarity 50.0%; Pred. No. 0.00076; 23; Conservative 2; Mismatches 13; Indels
                                                                             4 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGY----GYGYGGGYTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 105; DB 3;
Pred. No. 0.00076;
2; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2026-4201US1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: ASCII.
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/725,027
FILING DATE: 02-0CT-1996
PRIOR APPLICATION NUMBER: US08/538,711
APPLICATION NUMBER: US08/538,711
FILING DATE: 02-0CT-1995
ATTORNEY/AGENT INFORMATION:
NAME: KATHRYN M. BROWN
REGISTRATION NUMBER: 34,556
REFERENCE/DOCKET NUMBER: 2026-4201US
FELECOMUNICATION INFORMATION:
TELEPHONE: (212) 751-6849
INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ADDRESSEE: MORGAN & FINNEGAN, L.L.P. STREET: 345 PARK AVENUE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZIP: 10154
COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                        Sequence 8, Application US/08725027
Patent No. 6251586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: Amino Acid
STRANDEDNESS: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; MOLECULE TYPE: peptide US-08-725-027-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & F
           Best Local Similarity
Matches 23; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Linear
                                                                                                                                                                                             RESULT 12
US-08-725-027-8
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CENERAL INFORMATION:

GENERAL INFORMATION:

GENERAL INFORMATION:

TITLE OF INVENTION: NUCLEIC ACID AND AMINO ACID SEQUENCES RELATING TO CANDIDA ALBICANT TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS

TITLE OF INVENTION: FOR DIAGNOSTICS AND THERAPEUTICS

CURRENT PILING DATE: 1999-02-12

PRIOR PAPLICATION NUMBER: US 60/074,725

PRIOR PAPLICATION NUMBER: US 60/074,725

PRIOR APPLICATION NUMBER: US 60/096,409

PRIOR PILING DATE: 1998-02-13

PRIOR APPLICATION NUMBER: US 60/096,409

NUMBER OF SEQ ID NOS: 28208

SEQ ID NO 19967

LENGTH: 374
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APPLICANT: MULSHINE, JAMES, L.
TITLE OF INVENTION: AN EPITHELIAL PROTEIN AND
TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION
NUMBER OF SEQUENCES: 23
CORRESPONDENCE ADDRESS:
ADDRESSEE: MORGAN & FINNEGAN, L.L.P.
STREET: 345 PARK AVENUE
CITY: NEW YORK
STATE: NEW YORK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         9
                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 110.5; DB 4; Length 374; Pred. No. 0.00021; 3; Mismatches 9; Indels 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96 GYGSSMYGGGYGSSMYGHSMYGGGYGSSMYGGGYRGYGSGYG-GYGSY 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 2; Length 341;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 GYGTSLLGGSVGYP-YG----GSGFGS--YGSGY-GYGYGYGYGYGY
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/538,711A
FILING DATE: 02-OCT-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZIP: 10154
COMPUTER READMBLE FORM:
MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: ASCII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 8, Application US/08538711A
Patent No. 5994062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 02-0CT-1995
CLASSIFICATION: 435
PRIOR APPLICATION BATA:
PILLING DATE:
FILLING DATE:
ATTORNEY/AGENT INFORMATION:
REFERENCE/DOCKET NUMBER: 34,556
REPERENCE/DOCKET NUMBER: 2026.
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TELEPHONE: (212) 758-4800
TELEPAX: (212) 751-6849
INFORMATION FOR SEQ ID NO: 8:SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 37.7%;
Best Local Similarity 56.2%;
Matches 27; Conservative
                                                                                                                                                                                                                                                                                                                                                   TYPE: PRT ORGANISM: Candida albicans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Amino Acid
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TOPOLOGY: Linear
MOLECULE TYPE: peptide
US-08-538-711A-8
                                                                                                                                                                                                                                                                                                                                                                                                US-09-248-796A-19967
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Gaps

8;

Length 353;

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Sequence 7. Application US/08725027

Sequence 7. Application US/08725027

Patent No. 6251586

GENERAL INFORMATION:

APPLICANT: MULGHINE, JAMES, L.

APPLICANT: TOCKMAN, MELVYN, S. L.

TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION

TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION

TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION

TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION

TITLE OF INVENTION: L. L. P.

STREET: ADDRESSEE: MORGAN & FINNEGAN, L. L. P.

STREET: NEW YORK

STATE: NEW YORK

COUTTY: NEW YORK

COUNTY: USA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 105; DB 3; Length 353;
Pred. No. 0.00078;
2; Mismatches 13; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 GYCTSLLGGSVGYPYGGSGFGSYGSGYGYGY----GYGYGYGGYTD 45
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Pred. No. 0.00078;
2; Mismatches 13;
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APPLICATION NUMBER: US/08/725,027
FILING DATE: 02-0CT-1996
FILING DATE: 02-0CT-1996
FILING DATE: 02-0CT-1995
FILING TABLED TO THE TABLE TABLE TO THE TABLE TABLE
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                  TELECOMMUNICATION INFORMATION
                                          TELEPHONE: (212) 759-4800
TELEFAX: (212) 751-6849
INPORMATION FOR SEQ ID NO: 7:
SEQUENCE CHARACTERISTICS:
LENGTH: 353
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 35.8%;
Best Local Similarity 50.0%;
Matches 23; Conservative
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Best Local Similarity 50.0%;
Matches 23; Conservative
                                                                                                                                                                                                                             LENGTH: 353
TYPE: Amino Acid
STRANDEDNESS: Unknown
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STRANDEDNESS: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; TOPOLOGY: Linear; MOLECULE TYPE: peptide US-08-725-027-7
                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: Linear
MOLECULE TYPE: peptide
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| Patent No. 5994062
| GENERAL INFORMATION:
| APPLICANT: MULSHINE, JAMES, L. |
| TITLE OF INVENTION: DNA THEREOF FOR USE IN EARLY CANCER DETECTION NUMBER OF SEQUENCES: 23
| CORRESPONDENCE ADDRESS: ADDRESSEE: MORGAN & FINNEGAN, L.L.P. |
| STREET: 345 PARK AVENUE |
| STREET: NEW YORK |
| STATE: NEW YORK |
| COUNTRY: USA |
| CITY: USA |
| COUNTRY: USA |
| CITY: USA |
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 GYGTSLLGGSVGYPYGGSGFGSYGSGYGY----GYGYGGYTD 45
                                                                                                                                                                                                                                                                                                                                                       SOFTWARE: ASCII FC-EDS/RS-EDS SOFTWARE: ASCII FC-EDS/RS-EDS SOFTWARE: ASCII FC-EDS/RS-EDS SOFTWARE: APPLICATION NUMBER: US/09/542,552 FILING DATE: 03-APR-2000 CLASSIFFCATION'S PRIOR APPLICATION NUMBER: 08/538,711 FILING DATE: RATHRYN W. BROWN NAME: KATHRYN W. BROWN REGISTAATION NUMBER: 34,556 REFERENCE/DOCKET NUMBER: 2026-4201 TELECOMMUNICATION UNDRER: 2026-4201 TELECOMMUNICATION UNDRER: 2026-4201 TELECOMMUNICATION UNDRER: 212,759-4800 TELEPHONE: (212) 751-6849 INPORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SOFTWARE: ASCII
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/538,711A
FILING DATE: 02-0CT-1995
CLASSIFICATION: 435
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REGISTRATION NUMBER: 34,556
REFERENCE/DOCKET NUMBER: 2026-4201
                                                                                                                                                                                  COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
CMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMPUTER READABLE FORM:
MEDIUM TYPE: FLOPPY DISK
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; TOPOLOGY: Linear
; MOLECULE TYPE: peptide
US-09-542-552-8
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APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 23; Conserva
NEW YORK
NEW YORK
Y: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS:
                                                                                                                                        10154
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Gaps

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ixodes scap ashbya goss xenopus lae gallus gall

522 AA

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P. SEGURANE FROW N.A.

TISSUB-Brain, and Lung;

X. TISSUB-Brain, and Lung;

X. TISSUB-Brain, and Lung;

X. Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,

X. Rausherg R.L., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

X. Altschul S.F., Zeeberg B., Buercow K.H., Schaefer C.F., Bhat N.K.,

A Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

X. Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

X. Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

X. Altschul M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

X. Raba S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

X. Milalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Y. Helton E., Ketteman M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

R. Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUB=Colon carcinoma;

MBDLINE=2618108B; PubMed=8601611; DOI=10.1083/jcb.133.1.43;

Ando-Akateuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,

Itoh M., Yonemura S., Furuse M., Tsukita S.;

"Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rar-kangaroo homologues.";

J. Cell Biol. 133:43-47(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      van Itallie C.M., Fanning A.S., Anderson J.M.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Pukasawa M., Toylora T., Yoshitsugu K., Yoshikawa T.;
"Genomic structure of occludin gene.";
"Genomic structure of occludin gene.";
Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                    0925H2
0925H6
019176
SCP1 CHRVI
081816
07925H7
                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (Rel. 37, Created)
(Rel. 37, Last seq
(Rel. 45, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE PROM N.A.
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15-DEC-1998 (Re]
15-DEC-1998 (Re)
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canis famil
canis famil
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sapien
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521 AA

STANDARD;

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MEDLINE=97327764; PubMed=9182670; DOI=10.1083/jcb.137.6.1393; Sakakibara A., Furuse M., Saitou M., Ando-Akatsuka Y., Tsukita S.; "Possible involvement of phosphorylation of occludin in tight junction formation.";
                                                                                                                                                                                                                                                                                                                                                        J. Cell Biol. 137:1393-1401(1997).
-!- FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier. Interacts
                                                                                 Canis familiaris (Dog).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Carnivora, Pissipedia, Canidae, Canis.
                                                                                                                                                                                         MEDLINE=96181089; PubMed=8601611; DOI=10.1083/jcb.133.1.43; Ando-Akatsuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A., Itoh M., Yonemura S., Furuse M., Tsukita S.; Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat-kangaroo homologues.";
                                                                                                                                                                                                                                                                                                                                                                                                  with ZO-1.
-!- SUBUNIT: Interacts with VAPA (By similarity)
                             [5-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                         PHOSPHORYLATION.
    OCLN CANFA
                                                                      Occludin.
     This SMISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce) or send an email to license@isb-sib.ch).
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and mouse cDNA sequences.",
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

-I- FUNCTION: May play a role in the formation and regulation of the tight junction (TU) paracellular permeability barrier.

-I- SUBUNIT: Interacts with TUP1/ZO1 and with VAPA.

-I- SUBCELLULAR LOCATION: Integral membrane protein.

-I- TISSUE SPECIFICITY: Localized at tight junctions of both epithelial and endothelial cells. Highly expressed in kidney. Not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                            detected in testis.

DOWAIN: The C-terminal is cytoplasmic and is important for interaction with Zo-1. Sufficient for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).

PTM: Phosphorylated (By similarity).

SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GO; GO:0006461; P:protein complex assembly; TAS.
InterPro; IPR00253; Marvel.
InterPro; IPR010949; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; MARVEL; 1.
PFINTS; PR01259; OCCLUDIN_ELL; 1.
PRINTS; PR01259; OCCLUDIN_ELL; 1.
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Potential.
Cytoplasmic (Potential).
Potential.
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Coiled coil (Potential).
L -> S (in Ref. 4).
AOCF9574BCF6E974 CRC64;
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Pred. No. 3.3e-20;
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100.0%; Score 293; D
Best Local Similarity 100.0%; Pred. No. 3.3
Matches 50; Conservative 0; Mismatches
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AF400625; AAL47094.1; JOINED.
AF400627; AAL47094.1; JOINED.
AF400629; AAL47094.1; JOINED.
AF400629; AAL47094.1; JOINED.
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                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
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-1- SUBCELLULAR LOCATION: Integral membrane protein.
-1- SUBCELLULAR LOCATION: Integral membrane protein.
-1- TISSUE SPECIFICITY: Localized at tight junctions of both epithelial and endothelial cells.
-1- DOMAIN: The C-terminal is cytoplasmic and is important for interaction with 20-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).
-1- PTM: Phosphorylated. Less-phosphorylated forms are found in basolateral membrane, cytosol and tight junction. More-heavily phosphorylated forms are concentrated exclusively in tight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U49221; ANYSCOLOSTICAL STREET S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Potential.
Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coiled coil (Potential).
2875E59F8F0A1FFA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cytoplasmic (Potential). Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cytoplasmic (Potential). Gly/Tyr-rich. Poly-Pro.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Potential.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U49221; AAC48582.1; -
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TRANSMEM
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DOMAIN
SEQUENCE
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89 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGGTTDPRAAK 138

RESULT 2 OCLN_CANFA

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1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYTDPRAAK 50

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Gaps

5

Length 449;

20

Q9N0W3

RESULT 3

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MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

MEDLINE=22388257; Marchan M., Garcia M., Garcia M., Gabrian M., Marchan M., Marchan M., Garcia M., Garcia M., Gabrian M., Marchan 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                            16 WDRGYGT-LMGAGVNYPYAGSAFGSYGSGYGYGYGYGYGYGYGYGYGYGYTDPRAAK 65
                                                                                                                                                                                                                                                                                                                                 1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGGYGYGYGYGYGYG-GYTDPRAAK
                                                                                                                                                                                                                           81.2%; Score 238; DB 2; Length 44
84.3%; Pred. No. 5.2e-15;
ive 1; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Strausberg R.; Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases. Submitted (NOV-2003) to the EMBL; BC062037; AMH620371; BC062037; Cittegral to membrane; IEA. GO; GO:0005923; Citight junction; IEA. GO; GO:0005198; F:structural molecule activity; IEA.
                                                                                                                                                                           449 AA; 50627 MW; 235BE8259CF05D1C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      523 AA; 59186 MW; A31E007B58AEA5B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (TrEMBLrel. 27, Created)
(TrEMBLrel. 27, Last sequence update)
(TrEMBLrel. 27, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         79.5%; Score 233; DB 2;
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                     InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
FEam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin_ELL; 1.
PR.NTS; PR01258; OCCLUDIN.
NON TER.
1 1 1
SEQUENCE 449 AA; 50627 MW; 235BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TuterPro; IPR010845; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
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Pfam; PF07303; Occludin ELL; 1.
InterPro; IPR008253; Marvel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PR01258; OCCLUDIN
                                                                                                                                                                                                                                                                                 43; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-Prostate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     05-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-JUL-2004
05-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=Ocln;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Occludin.
                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
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STREAM
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                                                                           Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Kidney,
MEDLINE-20143583; PubMed=10679019;
Muresan Z., Paul D.L., Goodenough D.A.;
Mocludin 1B, a variant of the tight junction protein occludin.";
Mol. Biol. Cell 11:627-634(2000).
BMBL; AF246976; AF862172.1; -.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0016021; C:integral molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Bos taurus (Bovine).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Bovinae; Bos.
NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Carnivora, Fissipedia, Canidae, Canis.
                                                                                                                     128 WDRGYGTGLMGGSIGYPY-GSGFGSYGTGYGYGYGYGYGYTDPRAAX 176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ï
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYTDPRAAK 50
                     Length 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 560;
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TISSUB-Retinal endothelium;
Sundatrom J.M., Felinski E.A., Phillips B., Antonetti D.A.;
Submitted (APR.-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; AY589500; AAT00455.1; -.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005923; C:itight junction; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPRO(8253; Marvel.
InterPro; IPRO(0958; Occludin.
InterPro; IPRO1084; Occludin.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01283; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
SEQUENCE 560 AA; 63450 MW; D80B178D80AAB12D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                  Query Match

89.6%; Score 262.5; DB 1.

Best Local Similarity 88.0%; Pred. No. 2.7e-17;

Matches 44; Conservative 4; Mismatches 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 262.5; DB 2
Pred. No. 2.9e-17;
4; Mismatches 1
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                                                                                                                                                                                                                                                                                                                                                            Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                89.6%;
                                                                                                                                                                                                                                                                                                                                               01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
Best Local Similarity 88.09
Matches 44; Conservative
                                                                                                                                                                                                                                                                                                      PRELIMINARY;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Occludin (Fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE PROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9615;
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Q6PP84

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Length 523;

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InterPro;
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TRANSMEM
DOMAIN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
     5
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                     Gaps
                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Lung;
MEDLINE=96181088; PubMed=8601611; DOI=10.1083/jcb.133.1.43;
Ando-Akatenka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,
Itoh M., Yonemura S., Furuse M., Tsukita S.;
"Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat-kangaroo homologues.";
J. Cell Biol. 133:43-47(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN=CS7BL/6J; TISSUE=Ovary, and Uterus;
MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;
Okazaki Y., Furuno M., Kasukawa T., Adachi J., Bono H., Kondo S.,
                                                                                         89 WDRAYGTGIFGGSMNYPY-GSGFGSYGGFGGYGYGYGYGYGYTDPRAAK 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89 WDRAYGTGIFGGSMYPY-GSGFGSYGGGFGGYGYGYGYGYGGGTDPRAAK 138
                                                      1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGY-GYGYGYGYGYGYTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGY-GYGYGYGYGYGYTDPRAAK 50
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 79.5%; Score 233; DB 2; Length 52
80.4%; Pred. No. 1.8e-14;
ive 3; Mismatches 5; Indels
                   Indels
                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
STRAIN=SD; TISSUE=Liver;
Kokai Y., Kuwahara K., Atsumi S., Mori M.;
Kokai Y., Kuwahara K., Atsumi S., Mori M.;
Kokai Y., Mori M., Mori M., Mori M.;
Kokai Y., Mori M., Mori M.;
Kokai Y., Mori M., Mori M., Mori M.;
Kokai Y., Mori M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              523 AA; 59214 MW; SE1E007568AEA5B1 CRC64;
                                                                                                                                                                                                                                               Last sequence update)
Last annotation update)
 80.4%; Pred. No. 1.8e-14; ive 3; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
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                                                                                                                                                                                          523 AA
                                                                                                                                                                                                                            Created)
                                                                                                                                                                                         PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro, IPR010844, Occludin_ELL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin_ELL; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80.48;
                                                                                                                                                                                                                        01-MAY-1999 (TrEMBLrel. 10, 01-MAY-1999 (TrEMBLrel. 10, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR008253; Marvel
InterPro; IPR002958; Occlud
                 41; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      41; Conservative
                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Name=Ocln; Synonyms=Ocl;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 41; Conserv
Best Local Similarity
Matches 41; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FROM N.A.
                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRINTS: PR01258;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OCLN_MOUSE
                                                                                                                                                                                                                                                                                Occludin.
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                                                                                                                                                                                     Q92303
Q92303;
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OCLN_MOUSE
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Milatido I., Ognor N., Sailor S., Sundik H., Yashonbach C., Goldbort T., Asidershill R., Milli Dr. Pault C., Mognal A., Schombach C., Goldbort T., Asidershill R., Milli Dr. Pault C., Mognal A., Schombach C., Goldbort T., Asidershill R., Milli Dr. Pault C., Mognal A., Schombach C., Goldbort T., Asidershill R., M., Kanapin A., Matenda H., Batelow S., Belas R., M., Balke J.A., Bard D., Russel C., Control R., Goldbort T., Goldbort T., Goldbort T., Shanger R., S., Balke J.A., Bard D., Russel C., Goldfor R., Forster A., Parer K.S., Standard R., Managor R., Maltai E., Motton P., Lee Y., Lee Y., Lehner B., Myone P.A., Parer K.S., Shanger R., Sandardard R., Sandardard R., Schombach C., Serbic G., Perce G.,
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149 GYGDDAYGGA-GYDYYGSGYGGGYGSGY-EGYGYNGGYGGYSGP 190
                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                O08636
ID O08636
AC O08636;
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                        RESULT 9
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                                                                                                                                                                                                                                                      Gaps
                                                                                        Gaps
                                                                                                                                                                                                               Artemia salina (Brine shrimp).
Eukaryota, Metazoa, Arthropoda, Crustacea, Branchiopoda, Anostraca,
                                                                                                                1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGY-GYGYGYGGYTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .,
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    -1- PTM: Extensively phosphorylated on tyrosine residues.
    -1- SIMILARITY: Contains at least 1 RNA recognition motif (RRM)

                                                                                                                                                                                01-NOV-1195 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
05-UUL-2004 (Rel. 44, Last annotation update)
Heterogeneous nuclear ribonucleoprotein A/B (P38) (Fragments).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 43.9%; Score 128.5; DB 1; Length 195; Best Local Similarity 61.4%; Pred. No. 7.5e-05; Matches 27; Conservative 3; Mismatches 11; Indels 3
                                                                        Length 521;
                                                                       Score 214; DB 1; Length 52
Pred. No. 1.2e-12;
1; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Asymmetric dimethylarginine. Asymmetric dimethylarginine. Phosphoserine (by CK2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Asymmetric dimethylarginine
                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR00504; RNA rec mot.
PROSITE; PSS0102; RNM; PARTIAL.
Direct protein sequencing; Methylation; Nuclear protein;
Phosphorylation; Ribonucleoprotein; RNA-binding.
       Extracellular (Potential). Potential.
                                              Coiled coil (Potential).
21D62F370EB33E7D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20604 MW; CA062DA8520BB3DB CRC64;
                     Cytoplasmic (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                  RNA-binding (RRM).
                                                                                                                                                                195 AA
Potential
                                                                                                                                                                PRT;
                                                        59000 MW;
                                                                       Query Match 73.0%;
Best Local Similarity 80.4%;
Matches 41; Conservative
                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                 the cytoplasm.
                                                                                                                                                                                                                             Artemiidae, Artemia.
NCBI_TaxID=85549;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125
195
195 AA;
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P80350;
                                               DOMAIN
       DOMAIN
TRANSMEM
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SEQUENCE
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4 GYGTSLLGGSVGYPYGGSGF-GSYGSGYGYGYGYGYGYTDP 46

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Gaps
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                                                                                                                                                            Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                              MEDLINE=98043760; PubMed=9374545; DOI=10.1074/jbc.272.48.30512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7
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                                                                                                                                                                                                                                                                                                          Aoki N., Ito K., Ito M.; "Isolation and characterization of mouse high-glycine/tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
TISSUE-Hepatopancreas;
Strumbo B., Sangiorgio L., Bolis L.C., Ronchi S., Simonic T.;
Strumbo B., Sangiorgio L., Bolis L.C., Ronchi S., Simonic T.;
Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ490524; CAD35502.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2; Length 188;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2; Length 54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25 161 prion-like protein 1.
188 AA; 18700 MW; F1753B6995FB39FC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 RGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGY 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         106 GHGLSSM-GRPGYGYGYGGYGGHGYGYGHGYGHGHGHGHGHGH 144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2E7880E8822C1787 CRC64;
                           High-glycine (TrEMBLrel. 24, Last sequence update)
High-glycine tyrosine keratin type II.3 (Fragment).
Mus musculus (Mouse).
Ellaryota; Meranno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2003 (TrEMBLrel. 25, Created)
01-OCT-2003 (TrEMBLrel. 25, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 123.5; DB 2
Pred. No. 0.00022;
9; Mismatches 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 127.5; DB
Pred. No. 3e-05;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                    J. Biol. Chem. 272:30512-30518(1997).

EMBL; D89901; BAA1687.1; -.

MGD; MG1:330279; Krtap6-3.

GO; GO:0005882; C:intermediate filament; IEA.
Z
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      188 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Prion-like protein 1 precursor. Name=PrPL-P1-like;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    42.2%;
52.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 1
54 AA; 5729 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 64.3
les 27; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                       NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Prion; Signal.
                                                                                                                                                                                                                                                                                                                                                       proteins.";
J. Biol. Che
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SEQUENCE
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493 AA

STANDARD;

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OCLN XENLA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus.
                                                                                                                                                                          Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 GYGTSLLG-GSVGY--PYGGSGFGS-----YGSGYGYGYGYGYGYGYGY 43
                                                                                                                                                                                                                                                                       MEDLINE=98043760; PubMed=9374545; DOI=10.1074/jbc.272.48.30512;
                                                                                                                                                                                                                                                                                                                                                                                                                                                     7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 13;
                                                                                                                                                                                                                                                                                      Aoki N., Ito K., Ito M.;
"Isolation and characterization of mouse high-glycine/tyrosine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41.1%; Score 120.5; DB 2; Length 141; 53.8%; Pred. No. 0.00033; tive 3; Mismatches 8; Indels 13.
                                                                                                                                                                                                                                                                                                                                                                                                                       DB 2; Length 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10 GLGSGIRGFGNLGYGYGCGCGFGGYGYGGSGYGRYGYRPLYYGGY 56
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 GYGTSLIG-GSVGYPYG-GSGFGSYGSGYGYG-YGYGYG----YGGY 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGD; MGI:2157572; Krtap16-1.
SEQUENCE 141 AA; 13738 MW; EF58E63AD0BEF3E0 CRC64;
                                                                                                                                                                                                                                                                                                               proteins";
J. Biol. Chem. 272:30512-30518(1997).
EMBL; D86422; BAA15683.1; -
MGD; MGI:1330295; Krtape-2.
SEQUENCE 62 AA; 6688 WW; 493A2EB2B0C219A5 CRC64;
                                                                                     ב-טטב-בשאי (TrEMBLrel. 04, Last sequence update)
1-OCT-2002 (TrEMBLrel. 22, Last annotation update)
וויסות בעוספות ביולה hair protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                   Score 120.5; DB 2
Pred. No. 0.00016;
                                             62 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT; 141 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     4; Mismatches
                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Name=Krtap16-1; Synonyms=Krtap16.1;
                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE=21185977; PubMed=11290294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; ĀF345291; AAK52889.1; -.
HSSP; P10968; 7WGA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Keratin-associated protein 16
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 57.4%;
Matches 27; Conservative
                                                                         01-JUL-1997 (TrEMBLrel. 04,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        28; Conservative
                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                           Name=Krtap8-2;
Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=10090;
                                                                                                                                                                                                          NCBI_TaxID=10090;
                                                                                                                                                                                                                                                         TISSUE=Skin;
                                                                                             01-JUL-1997
                                         008632
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             RESULT 11
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RESULT 13 OCLN_XENLA

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Cordenonsi M., Mazzon B., De Rigo L., Baraldo S., Meggio F., Citi S.,
"Occludin dephosphorylation in early development of Xenopus laevis.";
"Occludin dephosphorylation in early development of Xenopus laevis.";
"Occludin dephosphorylation in early development of Xenopus laevis.";
"In Call Sci. 110:311-3139(1997).
"Occludin Perobably plays a role in the formation and regulation of the tight junction (TU) paracellular permeability barrier.
"Interacts with ZO-1 (By similarity).
"OCCLUDIN ELOCATION: Integral membrane protein.
"OCCLUDIN ELOCATION: Integral membrane protein."
"OCCLUDIN ELOCATION: Integral membrane, then to tight intections after cingulal and ZO-1. Nascent tight junctions are in place by the two-cell stage. The maternal form is more highly phosphorylated than the form detected in later developmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isp-sib.ch).
                                                                                                                                                                                                                                                                                                  TISSUE=Cvary;
MEDINE=99421641; PubMed=10491082;
MEDINE=99421641, Putor F., D'Atri F., Hammar E., Martinucci G.,
Meggio F., Citi S.;
Meggio F., Citi S.;
"Xenopus laevis occludin. Identification of in vitro phosphorylation
sites by protein kinase CKZ and association with cingulin.";
Eur. J. Blochem. 264:374-384(1999).
                                                                                                                                                Xenopus laevis (African clawed frog).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A., AND PHOSPHORYLATION SITES THR-375 AND SER-379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Brages.

DOWAIN: The C-terminus is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Coiled coil; Phosphorylation; Tight junction; Transmembrane. DOMAIN 1 47 Cytoplasmic (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cytoplasmic (Potential).
Potential.
Extracellular (Potential)
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Potential.
Extracellular (Potential)
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- PTM: Phosphorylated.-!- SIMILARITY: Belongs to the ELL / occludin family.
                                                            (Rel. 41, Last sequence update) (Rel. 44, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR01844; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHARACTERIZATION.
MEDLINE=98034414; PubMed=9365283;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF170275; AAD53725.1; -.
                                        (Rel. 41, Created)
                                                                                                                                                                                                                   Xenopodinae; Xenopus.
                                                                                                                                                                                                                                     NCBI_TaxID=8355;
                                                            28-FEB-2003
05-JUL-2004
                                        28-FEB-2003
                                                                                                                              Name=OCLN;
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DOMAIN
                                                                                                         Occludin.
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Schweizer J
                 HUMAN
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овій<u>Б</u>9;
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                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the buspean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3,
                                                                                              70 WD----LDITGQSMGY---GMGSGSYSGGYTGYGFGGSQMGLGFAYGGNYTDPRAAK 119
                                                                               1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGY-GYGY-----GYGYGYGG-YTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                               10; Indels 14; Gaps
              Phosphothreonine (by CK2) (in vitro). Phosphoserine (by CK2) (in vitro). 9694CD302BEBBEDE CRC64;
                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
NCBI TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 1; Length 79;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              41
                                               Length 493;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 RGYGTSLLGGSVGYPYGGSGFG---SYGSGY-----GYGYGYGYGYG
Cytoplasmic (Potential). Coiled coil (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-acetylcysteine.
3A45A75B029E0FF4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              . 0.0003;
10;
                                                DB 1;
                                                       0.0014
                                                                                                                                                     01-JUN-1994 (Rel. 29, Created)
01-JUN-1994 (Rel. 29, Last sequence update)
01-JUN-1994 (Rel. 45, Last annotation update)
Keratin, glycine/tyrosine-rich of hair.
                                                       Pred. No. 0.001
4; Mismatches
                                                                                                                                       79 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 57.4%; Pred. No. 0.00
Matches 27; Conservative 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 118.5;
                                                Score 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Acetylation; Keratin; Multigene family.
                                                                                                                                                                                              Oryctolagus cuniculus (Rabbit).
                                55111 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; M95718; AAA31379.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79 AA; 8143 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              40.48;
                                                40.68;
                                                       50.9%;
                                                       Local Similarity 50.9
hes 29; Conservative
                                                                                                                                       STANDARD;
493
428
375
379
247
396
375
379
493 AA;
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                                                                                                                                                                                      Name=KAP6-1;
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RABIT
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AND SECURNIES FROM N. N. N. METANDER H., Yada T., BALDINE-20289799; Pubbed=10830953; DOI=10.1038/35012518; Hattori M., Fujiyama A., Taylor T.D., Watanabe H., Yada T., Battori M., Fujiyama A., Taylor T.D., Watanabe H., Yada T., Battori M., Takagi T., Saekat Y., Taudien S., Blechschmidt K., Polley A., Andrew M., Schwald K., Rung K., Lehmann R., Patterson D., Zimermann W., Schwald K., Rung A., Schillhabol M., Schwdy A., Zimermann W., Shibuya K., Kawasaki K., Baranan W., Shintani A., Shihuya K., Kawasaki K., Baranda P., Shintani A., Shihuya K., Kawasaki K., Baranda P., Antonarakis S.E., Antonarakis S., Shintaizu N., Nordsisk G., Hornischer K., Brand P., Antonarakis S., Shintaizu N., Nordsisk G., Hornischer K., Brand P., Antonarakis S., Shintaizu N., Nordsisk G., Hornischer K., Baranda P., Ramser J., Beck A., Klages S., Hennig S., Riesselmann L., Dagand E., Mermeyer S., Borzym K., Gardiner K., Nizetic D., Francis F., Merrach S., Strintard K., Yasgo M.-L., Nateriol B., Francis F., Nature 405:311-319(2000).

The DNA sequence of human chromosome 21.";

Nature 405:311-319(2000).

The DNA sequence of human chromosome 21.";

Anture 405:311-319(2000).

The DNA sequence of human chromosome 21.";

Anture 405:311-310 condition of hair cortex, hair keratin intermediate filaments are embedded in an interfilamentous matrix, consisting of hair extensive disulfide bond cross-linking with abundant cysteine cresidues of hair keratins.

The SUBUNT: Interacts with hair keratins.

TISSUB SPECIFICITY: Detected in the upper portion of the hair
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its was by non-profit institutions as long as its content is no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseaisb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Characterization of a first domain of human high glycine-tyrosine and high sulfur keratin-associated protein (KAP) genes on chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                   Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       22;
                                                                        10-OCT-2003 (Rel. 42, Created)
10-OCT-2003 (Rel. 42, Last sequence update)
10-OCT-2004 (Rel. 42, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
Keratin associated protein 19-1 (High tyrosine-glycine keratin associated protein 19-1 (Fragment)
Name-KRTAP19-1; Synonyms-KAP19-1, KRTAP19-1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE=Scalp;
MEDLINE=22359007; PubMed=12359730; DOI=10.1074/jbc.M206422200;
Rogers M.A., Langbein L., Winter H., Ehmann C., Praetzel S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 118; DB 1; Length 88;
Pred. No. 0.00037;
3; Mismatches 9; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         26 X 2 AA repeats of G-[YCGS]
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    9268103BFD016D38 CRC64;
88 AA
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biol. Chem. 277:48993-49002(2002).
PRT;
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NON TER 1
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STANDARD;
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Best Local Similarity
Matches 28; Conser
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74

11 RGYGCCGYGG-LGYGYGGLGCGLGSYYGCGYRRLGCGYGCGYGYGYG 56

Search completed: April 1, 2005, 10:15:02 Job time : 25.2809 secs

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GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
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April 1, 2005, 09:31:32 ; Search time 237.953 Seconds (without alignments) 1054.491 Million cell updates/sec Run on:

US-09-891-064A-2_COPY_33_522

Perfect score:

1 MHVRPMLSQPAYSFYPEDEI......LKSKLSHIKKMVGDYDRQKT 490 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

1612378 segs, 512079187 residues Searched:

1612378 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Listing first 45 summaries Post-processing: Minimum Match 0% Maximum Match 100%

1: uniprot_sprot:*
2: uniprot_trembl:* UniProt 03:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Q16625 homo sapien	canie	Q9n0w3 canis famil	Q61146 mus musculu	Q6p6t5 rattus norv	Q9z303 rattus norv	Q6pp84 bos taurus	xenobna	Ogpun1 xenopus lae	brachyda	Q7zue7 brachydanio		Q91049 gallus gall		097766 sus scrofa		Q95m26 ovis aries	Q95m48 bos taurus	Q8n4s9 homo sapien	Q99le8 mus musculu	008856 mus musculu	P55199 homo sapien	_	Q6peg4 brachydanio	100472 homo sapien	Q922m9 mus musculu	Q80uj4 mus musculu	Q80vr2 mus musculu	homo	_	Q8gn45 escherichia
TD 01		OCLN_CANFA							ENLA		Q7ZUE7 (OTTR								ELL_HUMAN			UMAN				ELL3_HUMAN		Q8GN45
DB	-	٦	7	7	~	~	~	~	н	~	~	~	7	٦	~	~	~	~	7	~	٦	-	~	N	ч	~	~	ч	-	~	7
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& Query Match	100.0	93.1	93.1	90.2	89.8	89.7	83.1	55.3	53.4	44.4	44.2	41.9	41.3	39.8	24.1	14.2	11.4	11.4	11.1	10.9	9.1	8 6.	9.8		8.5		6.5	6.4	6.4	6.0	5.7
Score		2410.5	2410.5	2335.5	2326.5	2323.5	2152	1431	1382	1149	1144	1086.5	1070.5	1030.5	625	369	294	294	287.5	281.5	236.5	229.5	224	220.5	219	178	169.5	165	165	155	147
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Q9vw51 drosophila Q95ve5 drosophila P04104 mus musculu Q95ve6 drosophila Q65ve6 drosophila Q67112 escherichia Q6cuq3 kluyveromyc Q77z3 kluyveromyc Q9cx17 mus musculu Q9z331 mus musculu Q9z332 mus sapien
Q9VW51 Q95KS9 Y2C1 MOUSE Q95VE6 G6DJ30 GCUQ3 Q9CX17 Q9CX17 Q9CX17 Q9CX17 Q9CX17 Q9CX32 XCCF HUMAN Q9CX32Z XCCF HUMAN
1059 430 1060 1060 136 671 671 219 523 563 563 563
$\begin{matrix} \mathbf{v} & \mathbf{v} \\ \mathbf{v} & \mathbf{v} \\ \mathbf{v} & \mathbf{v} \\ \mathbf{v} & \mathbf{v} \\ \end{matrix}$
145 142.5 142.5 141 141 138.5 138.5 138.5 133.5 133.5 133 133 133 133
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## ALIGNMENTS

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REPUBLICE FROM N.A.

TISSUE-Brain, and Lung;

RA MEDLINE-2338625; PubMed-12477932; DOI=10.1073/pnas.242603899;

RA MEDLINE-2338625; PubMed-12477932; DOI=10.1073/pnas.242603899;

RA ALBENDIS E.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,

RA Altechul S.F., Zebeberg B., Buetow K.H., Schaefer C.F., Bhar N.K.,

RA Altechul S.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,

ROPKINS R.F., Jordan H., Moore T., Ranner A.A., Rubin G.M., Hong L.,

RA Stableton M.J., Uddin T.B. Donaldo M.F., Casavant T.L., Scheetz T.E.,

RAD Boast S.A., McEwan P.J., McKernan K.J., Maltek J.A., Mullahy S.J.,

RAD Boast S.A., McEwan P.J., McKernan K.J., Maltek J.A., Gunaretne P.H.,

RACHARGS S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

RAP Rahes J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RA Rodriguez A.C., Grimwood J.W., Schmutz J., Myers R.M.,

Blakesley R.W., Touchman J.W., Schmutz J., Myers R.M.,

RA Butterfield Y.S.N., Krzywinski M.I., Salaka U., Smailus D.E.,

RA Schnerch A., Schein J.E., Jones S.J.W., Marra M.A.,

RA Schnerch A., Schein J.E., Jones S.J.W., Marra M.A.,

"Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
TISSUB-COLON carcinoma;
MEDLINE=96181088, PubMed=8601611; DOI=10.1083/jcb.133.1.43;
MAGO-Akateuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,
Itoh M., Yonemura S., Furuse M., Tsukita S.;
Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat-kangaroo homologues.";
J. Cell Biol. 133:43-47(1996).
                                                                                                                                                                        Homo sapiens (Human).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             van Itallie C.M., Fanning A.S., Anderson J.M.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A. PLASSENGE T., Yoshitsugu K., Yoshikawa T.; Pukasawa M., Toyoto af occludin gene."; "Genomic structure of occludin gene."; Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                      Last sequence update)
Last annotation update)
                      522 AA
                      PRT;
                                                                 Created)
                      STANDARD;
                                                             (Rel. 37,
(Rel. 37,
(Rel. 45,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                           Q16625; Q8N6K1;
15-DEC-1998 (Rel.
15-DEC-1998 (Rel.
25-OCT-2004 (Rel.
                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE=Liver;
                      OCLN HUMAN
                                                                                                                                                          Name=OCLN;
                                                                                                                                   Occludin.
OCLN_HUMAN
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513 MVGDYDROKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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25-OCT-2004
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Q28269;
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and mouse cDNA sequences.",

Proc. Nacl. Acad. Sci. U.S.A. 99:16899-16903(2002).

- FUNCTION: May play a role in the formation and regulation of the cight junction (TJ) parcellular permeability barrier.

- FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) parcellular permeability barrier.

- SUBINIT: Interacts with TJP1/ZO1 and with VAPA.

- SUBINIT: Interacts with TJP1/ZO1 and with WAPA.

- SUBINIT: Interacts with TJP1/ZO1 and with WAPA.

- SUBINIT: Interacts motherial and endothelial cells. Highly expressed in kidney. Not detected in testis.

- DOMAIN: The C-terminal is cytoplasmic and is important for interaction with ZO-1. Sufficient for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).

- IP TMN: Phosphorylated (By similarity).

- IP TMN: PROSPHORYLATE (By ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGGYTDPRAAKGFMLAMAAFCFIAA 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS, PR01258; OCCLUDĪN.
Coiled coil; Phosphorylation; Tight junction; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Extracellular (Potential).
Potential.
Cytoplasmic (Potential).
Extracellular (Potential).
Potential.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cytoplasmic (Potential). Gly/Tyr-rich. Coiled coil (Potential). L -> S (in Ref. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Cytoplasmic (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   100.0%; Score 2590; DB 1;
100.0%; Pred. No. 6.1e-145;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GO; GO:0005886; C:plasma membrane; TAS.
GO; GO:0005461; P:protein complex assembly; TAS.
InterPro; IPR00353; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin.
Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin.BLL; 1.
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AR400625; AAL47094.1; JOINED.
AR400627; AAL47094.1; JOINED.
AR400627; AAL47094.1; JOINED.
AR400629; AAL47094.1; JOINED.
                                                                                                                                                                                                                                                                                                                 AF400630; AAL47094.1; -. AF400623; AAL47094.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             707303; Occludin ELL; 1. PR01258; OCCLUDIN.
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                                                                                                                                                                                                                                                                                            U49184; AACS0451.1; -
                                                                                                                                                                                                                                                                                                                                                                                                               BC029886; AAH29886.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
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1265
131
131
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233
                                                                                                                                                                                                                                                                                                      U53823; AAB00195
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; BC029886; AAH;
PIR; G02533; G02533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                233
522 AA;
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Matches 490;
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Sakakibara A., Furuse M., Saitou M., Ando-Akatsuka Y., Tsukita S.;
"Possible involvement of phosphorylation of occludin in tight junction formation.";
J. Cell Biol. 137:1393-1401(1997).
-i. FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier. Interacts
                                                                                                                                                                                              213 YALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIAIVLGFMIIVAFALIIFFAVKTRRRMD
                                                                                                                                                                                                                                                                                                                                        RYDKSNILMDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR
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                                                                                                                                                                                                                                                                                           RYDKSNI LWDKEH I YDEQPPNVEEWVKNVSAGTQDVPSPPSDYVER VDSPMAYSSNGKVN
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             393 TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK
LVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI
                                                                   153 LVIFVTSVIRSEMSRIRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI
                                                                                                                                             YALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
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-!- SUBGNIT: Interacts with VAPA (By similarity).

-!- SUBGELLUIAR LOCATION: Integral membrane protein.

-!- SUBCIFICITY: Localized at tight junctions of both epithelial and endothelial cells.

-!- DOMAIN: The C-terminal is cytoplasmic and is important for interaction with 20-1. Necessary for the tight junction of calization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).

-!- PTM: Phosphorylated. Less-phosphorylated forms are found in basolateral membrane, cytosol and tight junction. More-heavily phosphorylated forms are concentrated exclusively in tight
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Canis.
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MEDLINE=S618108B, PubMed=8601611, DOI=10.1083/jcb.133.1.43;

Ando-Akateuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,

Itoh M., Yonemura S., Furuse M., Tsukita S.;

"Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat-kangaroo homologues.";

J. Cell Biol. 133:43-47(1996).
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Mammalia, Eutheria, Carnivora, Fissipedia, Canidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (Rel. 37, Created)
(Rel. 37, Last sequence update)
(Rel. 45, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               521 AA
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Occludin 1B.
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                                                                                Q9NOW3;
                                                            Q9N0W3
                    RESULT 3
Q9NOW3
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                                                      This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Lucopean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         212 YAMCNQFYASTATGLYMDQYLYHYCVVDPQBAIAIVLGFMVIVAFALIIFFAVKTRRKMD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               192 LEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQAELDB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    452 INKELSRLDKELDDYREESEEFYMAAADEYNRLKQVKGSPDYKNKRNYCKQLKSKLSHIKK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93.1%; Score 2410.5; DB 1; Length 521; 91.2%; Pred. No. 2.4e-134; ive 23; Mismatches 19; Indels 1;
                                                                                                                                                                                                                                                                                                                                                 Tight junction; Transmembrane. Cytoplasmic (Potential). Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
Cytoplasmic (Potential).
Gly/Tyr-rich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Poly-Pro.
Coiled coil (Potential).
2875E59F8F0AIFFA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                              Extracellular (Potential)
                      occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Potential
                    SIMILARITY: Belongs to the ELL /
                                                                                                                                                                                               EMBL; U49221; AAC48582.1; -.
InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin. ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; Occludin. ELL; 1.
PRINTS; PR01258; Occludin. ELL; 1.
Coiled coil; Phosphorylation; Tight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           59275 MW;
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Best Local Similarity 91.2
Matches 447; Conservative
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521 AA;
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MEDLINE=20143683; PubMed=10679019;

MEDLINE=20143683; PubMed=10679019;

Mocaludin 1B, a variant of the tight junction protein occludin.";

Mol. Biol. Cell 11:627-634 (2000).

E MBL; AF246976; ARF62172.1;

R GO: GO:0016021; C:integral to membrane; IEA.

GO: GO:0005923; C:tight junction; IEA.

R GO: GO:0005988; F:structural molecule activity; IEA.

R InterPro; IPR002589; Occludin.

R InterPro; IPR010844; Occludin.

R InterPro; IPR010844; Occludin.

R Pfam; PF01284; MARVEL; 1.

R Pfam; PF01284; MARVEL; 1.
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                                                                                                                                                                 Canis familiaris (Dog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Butheria, Carnivora, Pissipedia, Canidae, Canis.
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91.2%; Pred. No. 2.7e-134;
ive 23; Mismatches 19; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      560 AA; 63450 MW; D80B178D80AAB12D CRC64;
                                                       Created)
Last sequence update)
Last annotation update)
     560 AA
PRT;
                                                       01-OCT-2000 (TrEMBLrel. 15,
01-OCT-2000 (TrEMBLrel. 15,
01-MAR-2004 (TrEMBLrel. 26,
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Matches 447; Conservative
  PRELIMINARY;
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DOMAIN
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MEDININE_25354683; DubMed=2466851; DOI=10.1038/nature01266;

RA

Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,

RA Nadari I.M., Kanapin A., Matsuda H., Batalov S., Beisel K.W.,

Baldarelli R., Dragani T.A., Fletcher C.P., Corbani L.E., Cousins S.,

RA Balake J.A., Bradt D., Brusto V., Chothia C., Corbani L.B.,

RA Gaasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,

RA Gaasterland T., Gariboldi M., Gissi C., Godzik A., Gough J.,

RA Kanai A., Kawaji H., Kawaswa Y., Kedzierski R.M., King B.L.,

RA Kanai A., Kawaji H., Kawaswa Y., Kedzierski R.M., King B.L.,

RA Kanai A., Kawaji H., Marchionni L., Mokenzie L., Miki H.,

RA Kanai A., Kawaji H., Marchionni L., Mokenzie L., Miki H.,

RA Nagashima T., Numata K., Okido T., Pavan W.J., Pertea G., Pesole G.,

RA Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.L.,

RA Sandelin A., Schneider C., Semple C.A., Setou M., Shimada K.,

Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,

RA Varano L., Wanner L., Wahlestedt C., Wang Y., Watanabe Y., Wallenbar B.,

A Verardo R., Wanner L., Wahlestedt C., Wang Y., Watanabe S.,

A Verardo R., Wanner L., Wahlestedt C., Wang Y., Watanabe S.,

Wilming L.G., Wynnhaw-Boris A., Yanagisawa M., Yang I., Yang I.,

RA Karaki T., Waki K., Kawai J., Alzawa K., Arakawa T., Konno H., Nakamura M., Satok M.,

A Miyazaki A., Sakai K., Sasaki D., Shibata K., Shinagawa A.,

A Miyazaki A., Sakai K., Sasaki D., Shibata K., Shinagawa A.,

Barrey B., Hashizume W., Imcrani K., Ishinagawa A.,

Barrey B., Hayashizaki Y.,

RA Barray B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEVELOPMENTAL STAGE: Found diffusely on the lateral membranes of Sertoli cells in the early prepubertal period. With development, became gradually concentrated at the most basal regions of Sertoli
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--- SUBUNIT: Interacts with TJP1/ZO1 and with VAPA (By similarity).
--- SUBCELLULAR LOCATION: Integral membrane protein.
--- TISSUE SPECIFICITY: Localized at tight junctions of both epithelial and endothelial cells. Highly expressed in the testis,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kidney, lung, liver and brain. Not detected in skeletal muscle, spleen and heart.
                                                                                                                                                                                                                              Name-Ocin; Synonyms-Oci;
Mus musculus (Mouse).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                    TISSUBLANCE FROM N.A.

TISSUB-Lung;

TISSUB-Lung;

Ando-Akatauka Y., Saltou M., Hirase T., Kishi M., Sakakibara A.,

Itoh M., Yonemura S., Furuse M., Tsukita S.;

Tincerspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rar-kangaroo homologues.";

J. Cell Biol. 133:43-47(1996).
                                                                                                               15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
                                                               521 AA
                                                               PRT;
                                                               STANDARD;
                                                         OCLN MOUSE
Q61146;
                                                                                                                                                                                                            Occludin.
RESULT 4
OCLN_MOUSE
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  90.2%; Score 2335.5; DB 1; Length 521; 90.0%; Pred. No. 6.6e-130; ive 20; Mismatches 24; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Phosphorylation, Tight junction, Transmembrane.

1 66 Cytoplasmic (Potential).
67 89 Potential.
90 133 Extracellular (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Potential.
Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Coiled coil (Potential).
21D62F370EB33E7D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cytoplasmic (Potential).
Gly/Tyr-rich.
                                                                                                                                     or send an email to license@isb-sib.ch)
                                                                                                                                                                                                   EMBL; AK019880; BAB31900.1; -. MGD; MG1.1001831 Oclin. MGD; GO:0005886; C:plasma membrane; IDA. GO; GO:0005923; C:tight junction; IDA. GO; GO:0005515; F:proctein binding; IPI. InterPro; IPR008253; Marvel. InterPro; IPR002958; Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Poly-Pro.
                                                                                                                                                                                                                                                                                                                                                              InterPro, IPR010844; Occludin_ELL.
                                                                                                                                                                                                                                                                                                                                                                                Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59000 MW;
                                                                                                                                                                                   EMBL; U49185; AAC52515.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Best Local Similarity 90.0%
Matches 442; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             521 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PR012
Coiled coil;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        240
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TRANSMEM
DOMAIN
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TRANSMEM
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DOMAIN
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479 KKMVGDYDRQK 489

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DOMAIN: The C-terminal is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity). FUM: Phosphorylated (By similarity). SIMILARITY: Belongs to the ELL / occludin family.

+ +

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01-MAY-1999 (TrEMBLrel. 10,
01-MAY-1999 (TrEMBLrel. 10,
01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 88.4%
Matches 435; Conservative
                                                                                                                                                                                                                                                                                                                                                                   KKMVGDYDRQKT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1] -
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                479
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                      180
                                                                                    240
                                                                                                                 272
                                                                                                                                                   300
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SEQUENCE
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                                                                                                                                                                                                                                                                                                      MEDINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
Ratausberg R.L., Feingold B.A., Grouse L.H., Derge J.G.,
RETAUSBERG R.L., Feingold B.A., Grouse L.H., Derge J.G.,
RIAUGHORT R.D., Collins F.S., Wagner L., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Antschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
Diatchenco L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
A. Scares M.B., Bonaldo M.F., Casavant T.L., Schetz T.E.,
B. Stapletcon M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
A. Raha S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Glbbs R.A.,
Rahetton B., Ketteman M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Mhiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Anting M., Madan A., Young A.C., Scheutz J., Myers R.M., Butterfield Y.S.,
Anting M., Marra M.A.,
Jones S.J., Marra M.A.,
Anting M., Marra M.A.,
Anting M., Marra M.A.,
Anting M., Anting M., Schalska U., Smailus D.E., Schnerch A., Schein J.E.,
Anting M., Anting M., Anting M., Schalska U., Smailus D.E., Schnerch A., Schein J.E.,
Anting M., Schalska U., Smailus D.E., Schnerch A., Schein J.E.,
Anting M., Anting M
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93 YGTGIFGGSMNYPY-GSGFGSYGGGFGGYGYGYGYGYGYGYGYGTDPRAAKGFLLAMAAFCFIA 151
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                                                                                                                                                                                                                          Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       89.8%; Score 2326.5; DB 2; Length 523;
.larity 88.6%; Pred. No. 2.2e-129;
Conservative 25; Mismatches 28; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Strausberg R.;
Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        59186 MW; A31E007B58AEA5B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GO:0016021; C:integral to membrane; IEA.
GO:0005923; C:tight junction; IEA.
GO:0005198; F:structural molecule activity; IEA.
                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                523 AA
                                                                                                                                  Created)
                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin_ELL; 1.
                                                                                                                           05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27, 05-JUL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; BC062037; AAH62037.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         and mouse cDNA sequences."
PRELIMINARY;
                                                                                                                                                                                                                Rattus norvegicus (Rat).
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                                                                                                                                                                                                                                                                                [1]
SEQUENCE FROM N.A.
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                                                                                                                                                                                Occludin.
Name=Ocln;
                  210
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179
IYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKM 239
                                                                                                                                             331
                                                                                                                                                                                               NDKRFYPESSYKSTP-VPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRS 358
                                                                                                                                                                                                                            418
                                                                                                                                                                                                                                                                                                                               478
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                          212 IYTICSQFYTPGGTGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIVFAVKTRRRM
                                                                                                                             DRYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     120 ALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQ
                                                                                                                                                                                                                                                                                                       KRIEQDHYETDYTIGGESCDELEEDWIREYPPITSDQQRQLYKRNFDIGLQEYKSLQSEL
                                                                                                                                                                                                                                                                                                                                                                                                       DEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat).
Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gape
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STEALMLED, TISSUE-Liver;
Kokai Y., Kuwahara K., Atsumi S., Mori M.;
Submitted (UUL-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; ABO16425; BA436681.1; --
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:000523; C:tight junction; IEA.
GO; GO:0005199; F:structural molecule activity; IEA.
InterPro; IPR00853; Marvel.
InterPro; IPR00853; Occludin.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
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Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
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TISSUB-Kidney;

Tataubberg R.L., Feingold B.A., Groube L.H.)

A traubberg R.L., Feingold B.A., Groube L.H.)

A traubberg R.L., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A lischul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,

A latschul S.F., Jordan H., Moore T., Max S.I., Wang J., Haich F.,

A box stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

Rahe W., Touchman J.W., Green E.D., Dickson M.C.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Rydiguez A.C., Garimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,

Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,

Ryd Bones S.J., Marra M.A.;

"Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                       400
                                                                  340
                                                                                                                                                                                                                                                                       359
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                                                                                                            240 SDYVERVDSPVAYSSNGKVNEKRLYPESSYKSTPVPEVAGELPLTSPVEDFRQPHYSSSG
                                                                      SDYVERVDSPMAYSSNGKVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGG
                                                                                                                                                                                                       341 NPETPSKRAPAKGRAGRSKRIEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLY
                                                                                                                                                                                                                                              NLETLSKRAPAKGRAKGRSRRAEQDHYETDYTTGGESCDELEDDWIREYPPITSDQQRQLY
                                                                                                                                                                                                                                                                                                                                             401 KRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xenopus laevis (African clawed frog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
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BEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,
Richardson P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Genetic and genomic tools for Xenopus research: The NIH Xenopus initiative.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Klein S., Gerhard D.S.;
Submitted (AUG-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; BCO81061; AAH81061.1; -.
InterPro; IPR008938; ARM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               461 YKSKKNHCKQLKSKLSHIKKMVGDYDRQKT 490
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Xenopodinae; Xenopus.
NCBI_TaxID=8355;
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TISSUE=Kidney;
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Name=MGC81923;
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   212 IYTICSQFYTPGGTGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIVFAVKTRRKM 271
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                                                                                                                120 YIMGVNPTAQASGSLYSSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIAIVLGFM
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42 VMCIAIFACVASTLAWDRGYGTSLLGGSVGYPYGGSGFGSYGSGGYGYGYGYGYGYG-GYT
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Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
Bovinae; Bos.
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Sundstrom J.M., Felinski E.A., Phillips B., Antonetti D.A.;
Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases.
EMBL, AYS9500; AAT00455.1; -
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005923; C:tight junction; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
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Last annotation update)
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InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
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Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
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| KRMVGDYDRRKT 523
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05-JUL-2004 (TrEMBLrel.
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Occludin (Fragment).
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**Cordenonsi M., Mazzon E., De Rigo L., Baraldo S., Meggio F., Citi S.;

**Cordenonsi M., Mazzon E., De Rigo L., Baraldo S., Meggio F., Citi S.;

**Corludin dephosphorylation in early development of Xenopus laevis.";

**Cell Sci. 110:1313-1319(1997).

**Interacts with zero in the formation and regulation of the tight junction (TU) paracellular permeability barrier.

**Interacts with Zo-1 (By similarity).

**Interacts with Zo-1 (By similarity)
                     MEDLINE=98034414; PubMed=9365283;
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                                                                                                                                                                                                                                             102 TGQSMGY---GIGSGSYSGGYNGYGFGGSQMGMGFAYGGNSTDPRAAKGFILAMAAFCFI
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                                                                                                                                                                                                                                                                                                 LGGSVGYPYGGSGFGSYGSGY-GYGY-----GYGYGYG-YTDPRAAKGFMLAMAAFCFI
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Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae,
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MEDINE=99421641; PubMed=10491082;
Ordinne=9421641; Pubco F., D'Atri F., Hammar E., Martinucci G.,
Meggio F., Citi S.;
                                                                                                                                                Length 519;
                                                                                                                                                                                     Indels
                                                                                                            519 AA; 57764 MW; 0B21C652C9D87388 CRC64;
                                                                                                                                              55.3%; Score 1431; DB 2;
58.1%; Pred. No. 1.7e-76;
ive 76; Mismatches 90;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-FEB-2003 (Rel. 41, Created)
28-FEB-2003 (Rel. 41, Last sequence update)
05-JUL-2004 (Rel. 44, Last annotation update)
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nterPro; IPR010844; Occludin_ELL.
                                                  Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                   Matches 291; Conservative
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Best Local Similarity
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Q9PUN1;
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                   InterPro;
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                                                                                                            SEQUENCE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FACVASTLAWDRGYGTSLLGGSVGYPYGGSGFGSYGSGY-GYGY----GYGYGYGG-YT 100
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Phosphoserine (by CK2) (in vitro).
9694CD302BEBBEDE CRC64;
Brages.

DOMAIN: The C-terminus is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction interaction. Involved in the regulation of the permeability barrier function of the tight junction (By similarity). PTM: Phosphorylated.

SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; DB 1; Length 493;
1.3e-73;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR01258; OCCLUDĪN.
Coiled coil; Phosphorylation; Tight junction; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83; Mismatches 100; Indels
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Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
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Extracellular (Potential)
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                                                                                                                                                                                                                                                                                                                                                                                                                                  Interpro, IPR008253, Marvel.
Interpro, IPR002958, Occludin.
Interpro, IPR010844, Occludin_ELL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                            EMBL; AF170275; AAD53725.1; -.
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fatches 284; Conservative
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InterPro; IPR010844; Occludin_ELL
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                                                                                           SEQUENCE
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Rlauener R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bahat N.K.,
Altschul S.F., Zeeberg E., Buetow K.H., Schaefer C.F., Bahat N.K.,
A physins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
A papleton M., Soarse M.B., Bonaldo M.F., Gasavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Tooshlyuki S., Carninci P., Prange C.,
A Brownstein M.J., Usdin T.B., Tooshlyuki S., Carninci P., Prange C.,
A Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McKwan P.J., McKernan K.J., Malek J.A., Glubs R.A.,
A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A.,
A Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
Jones S.J., Marra M.A.,
T. "Generation and initial analysis of more than 15,000 full-length human
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                                                                                                                                                                                                                                               RQLYKRNFDTGLQEYKSLQSELDEINK-ELSRLDKEL-DDYREESEEYMAAADEYNRLKQ 454
                 174 YIVGVNPVAQASGSAFYIQIVSICNQFYSPVQTGVFVNQYLYHYCVVEPQEAIAIVLGFL
                                                                                                                       --SDYVERVDSPMA-YSSNGKVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYS
                                                                                                                                                                                                      YIMGVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFM
                                                            IIVAFALIIFFAVKTRRKMDRYDKSNILWDKEHIYDEOPPNVEEWVKNVSAGTODVPSPP
                                                                            ALSDYNEKVDGSVADYRS---ANGVQAYPSQNNISHPIAE--EELPLKE--DYGMSPRHY
                                                                                                                                                                                    SGGNFETPSKRAPAKGRAGRSKRIEQDHYETDYTIGGESCDELEED-WIREYPPITSDQQ
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Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes,
Cyprinidae, Danio.
NCBI_TaxIb=7955;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE=22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;
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                                                                                                                                                                                                                                                                                                                                                                                                                                               05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
Hypothetical protein (Fragment).
Brachydanio rerio (Zebrafish) (Danio rerio).
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                                                                                                                                                                                                                                                                                                                            VKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDR 487
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Submitted (MAR-2004) to the EMBL/GenBank/DDBJ
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InterPro; IPR002958; Occludin.
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161
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  357
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         271 NYGKDNILWRKVKEFDDQNSPQDVEDWVNNVNGAPEGL-----LADYPVKFGSRNN 321
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                                                                                                                                                                                                                                                                 299 VNDKRFYPESSYKSTPVPE-VVQELPLISPVDDFRQPRYSSGGNFETPSKRAPAKGRAGR
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MEDLINE=2238827; PubMed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Strausner R.D., Collins F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Haieh F.,
Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
NCBI_TaxID=7955;
                                                                                                                                                                                                  34;
                                                                                                                                                       Length 500;
                                                                                                                                                     44.4%; Score 1149; DB 2; Length 5
46.6%; Pred. No. 7.4e-60;
ive 90; Mismatches 138; Indels
                                                                                                            500 AA; 56126 MW; 592FFF0491A17B23 CRC64;
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Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
Pfam, PF01284; MARVEL; 1.
Pfam, PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-JUN-2003 (TrEMBLrel. 24, 01-JUN-2003 (TrEMBLrel. 24, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                              3est Local Similarity 46.6
4atches 229; Conservative
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489 IKKMVSDYDRR 499
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                                                          Hypothetical protein.
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RESULT 12
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Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C., Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J., Bosak S.A., McKernan K.J., Malek J.A., Gunarane P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergren B.J., Lu X., Gibbs R.A., Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Boutfard G.G., Blakeeley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Krzywniski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J., Marra M.A.; "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24 QPAXSYYPDDEFQHFYRWTSPPGIIKIMCVLSIIFCVGIFVCVASTLAMDTNAGAAGFGT
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Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
BMBL; BC049304; AAH49304.1;
ZFIN; ZDB-GENB-0.464.2; Zgc.56359.
GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005923; C:tight junction; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
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44.2%; Score 1144; DB 2; 1
Best Local Similarity 46.4%; Pred. No. 1.4e-59;
Matches 228; Conservative 90; Mismatches 139;
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InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_BLL.
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Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
SEQUENCE 492 AA; 55173 MW;
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TELENBE-22188257; PubMed=12477932; DOI=10.1073/pnas.242603899;

A Klausner R.D., Cellins F.S., Wagner L.H., Derge J.G.,

A Altschul S.P., Zeeberg B. Buetow K.H., Schaefer C.R., Bhat N.K.,

A Altschul S.F., Zeeberg B. Buetow K.H., Schaefer C.R., Bhat N.K.,

A Altschul S.F., Zeeberg B. Buetow K.H., Schaefer C.R., Bhat N.K.,

A Altschul S.P., Zeeberg B. Buetow K.H., Schaefer C.R., Bhat N.K.,

A Bother D., Marusina K., Farmer A.A., Rubin G.M., Hong L.,

B capleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

B cannetein M.J., Usdin T.B., Tochiyuki S., Carninci P., Prange C.,

Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

B Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,

A Richards S., Worley K.C., Shevchenko Y., Bouffard G.G.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,

Brank M. I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,

Jones S.J., Marra M.A.,

T "Generation and initial analysis of more than 15,000 full-length human
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                                                                                                                                                                                                                                   Xenopus laevis (African clawed frog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,
Richardson P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Genetic and genomic tools for Xenopus research: The NIH Xenopus
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45.4%; Pred. No. 3.6e-56;
ive 78; Mismatches 140; Indels 57;
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Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; BC070670; AAH70670.1; -.
GO; GO:00165021; C:integral to membrane; IEA.
GO; GO:0005923; C:ight junction; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
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497 AA; 56202 MW; 269431E14ECD0EA1 CRC64;
                                                                05-JUL-2004 (TrEMBLrel. 27, Created)
05-JUL-2004 (TrEMBLrel. 27, Last sequence update)
05-JUL-2004 (TrEMBLrel. 27, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sci. U.S.A. 99:16899-16903(2002)
       497 AA.
   PRT;
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Pfam; PF07303; Occludin_ELL; 1.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dev. Dyn. 225:384-391(2002)
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Matches 229; Conservative
   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                              Xenopodinae; Xenopus.
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TISSUE=Kidney;
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                                                                                                                                                                   MGC82312 protein.
Name=MGC82312;
                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=8355;
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Q6NRR0
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the European Bioinformatics Institute. There are no restrictions on its most by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GSVGYPYGG-SGFGSYGSGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAALVIFVT
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  247 ILWDKEHIYDEQPPNVEEWVKNVSAG------TQDVPSPPSDYVERVDSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          291 MA-YSSNGKVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -----HGEEEEKGKDQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRGYGTSLLG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SVIRSEMSRIRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQIYALCNQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                263 IYWDRAPVVQE-GPDVEEWVRNVADGASVQDETATLAYSEKPTSPVAAPPYSY---VPPP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PAK--GRAGRSKR----TEQDHYETDYTTGGESCDEL-BEDWIREYPPITSDQQRQLYKR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        103 NPDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59;
                                                                                                                                                                                                                                                                                                                                                                                                                                              41.3%; Score 1070.5; DB 1; Length 504;
45.3%; Pred. No. 3.2e-55;
ive 72; Mismatches 145; Indels 59;
                                                                                                                                                                                                                n; Tight junction; Transmembrane.
Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
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Gly/Tyr-rich.
Poly-dry.
Poly-Arg.
Coiled coil (Potential).
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                                                                                                                            InterPro; IPR000253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
Pfam; PF01284; MARVEL; I.
Pfam; PF07303; Occludin ELL;
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                Colled coil; Phosphorylation;
DOWAIN 1 58 80 P
TRANSMEM 58 80 P
DOMAIN 81 123 E
TRANSMEM 124 148 P
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IntAct; Q91049; -.
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Matches 229;
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                                                                                                       242
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                                            IFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQIYA 182
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                                                                                                                                                                                                                                                                                                                                                 |: || : : || : || : || : || DLRHYKVMCAEMDDINNOLOGOLSKOLDGLTEGTTOYQGVDDEYNRLKDLKRTPDYQTKKM 473
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBCELLULAR LOCATION: Integral membrane protein.

TISSUE SPECIFICITY: Localized at tight junctions of both
expressed and endothelial cells, Highly expressed in lung and
liver. Expressed at a lower level in brain.

DOMAIN: The C-terminal is cytoplasmic and is important for
interaction with ZO-1. Necessary for the tight junction
localization. Involved in the regulation of the permeability
barrier function of the tight junction. The second extracellular
domain may also be implicated in the permeability barrier function
 LCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMDRY
                                                                                                                       DKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSD----YVERVDSPMAYSSNG
                                                                                                                                                                                      GOPNINWDKPVTAFQEGPNVEEWVKNVPDG-----PPDDTATLIYSEKPQSPVKALSNN
                                                                                                                                                                                                                   KVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDF---RQPRYSSG----GNFETPSKRAP
                                                                                                                                                                                                                                               SI-----YK----YK-----PPVDTFEARESPPMSSSLVSDSELQEQSRSRP
                                                                                                                                                                                                                                                                            AKGRAGRSKRT----EQDHYETDYTTGGESCDELE-EDWIREYPPITSDQQRQLYKRNFDT
                                                                                                                                                                                                                                                                                            354 PVHRGRRRRRNPELDESQYETDYTTAVESGDDRDLGEWDSLYPPIESDSQRQEYKKEFAS
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
Gallus.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             junctions...,
J. Cell Biol. 123:1777-1788(1993).
-!- FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier. Interacts with ZO-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE=Embryonic brain;
MEDLINE=94103332; PubMed=8276896; DOI=10.1083/jcb.123.6.1777;
Furuse M., Hirase T., Itoh M., Nagafuchi A., Yonemura S., Tsukita :
Tsukita S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Occludin: a novel integral membrane protein localizing at tight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             of the tight junction.

PTM: Phosphorylated (By similarity).

SIMILARITY: Belongs to the ELL / occludin family.
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Last sequence update)
Last annotation update)
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Gallus gallus (Chicken).
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(Rel. 37, I
(Rel. 45, I
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15-DEC-1998
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                                                        133 VIAGLSKASGARSRRFYLLVAVLSGLLAFVMLIASIVYVVGVNPRAGLGASSGSLYYNQM 192
                                                                                                                                    RYDKSNILWDKEHIYDEOPPNVEEWVKNVS--AGTODVPSPPSDYVERVDSPMAYSSNGK 298
                                                                                                                                                                                                                              252 KYGKPNIFWDKP-LATAEGPNVEEWVKNVSGDVGTQDETATLA-YSEKPISPLT---- 303
                                                                                                                                                                                                                                                                    299 VNDKRPYP--ESSY-KSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRA 355
                                                                                                                                                                                                                                                                                                                                                                      413 SLOSELDEINKELSRLDKELDDYREESEEYMAAADEYNRLKOVKGSADYKSKKNHCKQLK 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                 124 FVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTA---QSSGSLYGSQI
                                                                                                                181 YALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                                                                                                                                                                                                                                        ---SAFLPAQENGYGHSTP----SSPSVPPEGPSPPEEKDKGSVSRPPAR---RGHR
                                                                                                                                                                                                                                                                                                                                              GRSKRT---EQDHYETDYTTGGESCDEL-BEDWIREYPPITSDQQRQLYKRNFDTGLQEYK
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Sus.
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MEDLINE=97388360; PubMed=9247194;
MIDLINE=97388360; PubMed=9247194;
Mirase T., Staddon J.M., Saitou M., Ando-Akatsuka Y., Itoh M., Furiuse M., Fujimoto K., Tsukita S., Rubin L.L.;
"Occludin as a possible determinant of tight junction permeabiendothelial cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 121;
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121 AA; 14433 MW; 6B37FD57A5F647A6 CRC64;
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Bukaryota; Metazoa; Chordata; Craniata; Vertebrata;

Mammalia; Eutheria; Cetartiodactyla; Suina; Suidae;

NOB TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
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llarity 96.7%; Pred. No. 1.3e-29;
Conservative 4; Mismatches 0;
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BMBL; U79554, ABD00349.1, -.
InterPro; IPR010844; Occludin ELL.
Pfam; PF07303; Occludin ELL; I.
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                                                                                                                                                Potorous tridactylus (Potoroo).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Metatheria, Diprotodontia, Potoroidae, Potorous.
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PRINTS; PR01258; OCCLUDIN.
Coiled coil; Phosphorylation; Tight junction; Transmembrane.
Cytoplasmic (Potential).
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Extracellular (Potential).
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Extracellular (Potential).
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Gly/Tyr-rich.
Coiled coil (Potential).
4F0CA45A41094860 CRC64;
                                                                          Last sequence update)
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InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
Pfam; PP01284; MARVEL; 1.
Pfam; PF07303; Occludin_ELL; 1.
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                    STANDARD;
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15-DEC-1998 (Rel. 37,
25-OCT-2004 (Rel. 45,
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                    POTTR
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Search completed: April 1, 2005, 10:15:01 Job time : 240.953 secs

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April 1, 2005, 09:16:13 ; Search time 134.856 Seconds (without alignments) 122.943 Million cell updates/sec
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293
1 WDRGYGTSLLGGSVGYPYGG......GYGYGYGYGYGYGYTDPRAAK 50
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| Cgn2_6/ptodata/2/pubpaa/US06_PUBCMB.pep:*
| Cgn2_6/ptodata/2/pubpaa/US06_PUBCMB.pep:*
| Cgn2_6/ptodata/2/pubpaa/US08_PUBCMB.pep:*
| Cgn2_6/ptodata/2/pubpaa/US09_RW PUB.pep:*
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GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

WDRGYGTSLLGGSVGYPYGGSGFGSYGSGGYGYGYGYGYGYGYGYGTDPRAAK 138

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RESULT

1 WDRGYGTSLLGGSVGYPYGGSGFGSYGYGYGYGYGYGYGYGYTDPRAAK 50

Sequence 17, Appl sequence 64513, A Sequence 157867, Sequence 157867, Sequence 1671, Ap Sequence 1671, Ap Sequence 1671, Ap Sequence 1041, Ap Sequence 10517, Ap Sequence 35229, A Sequence 58912, A Sequence 58912, A Sequence 19229, Sequence 19209, Sequence 19209, Sequence 191576, Sequence 158770, Sequence 158770, Sequence 5584, Appl Sequence 158770, Sequence 158770, Sequence 158770, Sequence 58448, Ap Sequence 58448, Ap Sequence 58448, Ap Sequence 158770, Ap Sequence 158770, Sequence 158770, Sequence 158770, Ap Sequence 158770, Sequence 158	Enhancement of Drug	0 8
14 106.5 36.3 154 14 US-10-280-114-17 15 106.5 36.3 336 15 US-10-425-114-64513 16 106 36.2 156 15 US-10-425-114-64111 105.5 36.0 156 15 US-10-425-114-64111 105 35.8 212 14 US-10-106-696-5921 20 104 35.5 197 15 US-09-935-60-1671 22 103 35.3 340 16 US-09-935-642-14 24 103.5 35.3 340 16 US-10-374-780A-1041 25 102.5 35.0 478 15 US-10-374-780A-1041 26 102.5 35.0 478 15 US-10-374-780A-114381 27 102.5 35.0 478 15 US-09-910-430-34 28 102.5 35.0 478 15 US-09-910-430-34 29 100.5 34.3 6 16 US-10-767-701-45105 31 101.5 34.6 62 16 US-10-767-701-45105 31 100.5 34.3 205 16 US-10-767-701-45105 32 100.5 34.3 16 US-10-767-701-45105 33 100.5 34.3 16 US-10-767-701-45105 34 100.5 34.3 16 US-10-767-701-45104 35 100.5 34.0 19 US-09-799-77-64 36 99.5 34.0 19 US-09-799-77-64 37 99.5 34.0 19 US-09-799-77-64 38 99.5 34.0 19 US-09-799-77-64 39 33.8 196 15 US-10-426-191576 39 33.8 196 15 US-10-426-59-158770	ALIGNMENTS  1064A  tallie udin, Its Uses and udin, 1064A  /09/891,064A  25  9/142,732  udin  score 293: DB 9:	maccn Local Similarity 100.0%; Pred. No. 6.1e-24; es 50; Conservative 0; Mismatches 0;

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Indels

Length 24;

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Sequence 129038, Application US/10437963

Sequence 129038, Application US/10437963

Publication No. US200401233431

GENERAL INFORMATION:

APPLICANT: La Rosa, Thomas J.

APPLICANT: Cao, Vongwei

APPLICANT: Wu, Wei

APPLICANT: Butharrov, Andrey A.

APPLICANT: Li, Ping

TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REFERENCE: 38-21(5321)B

CURRENT APPLICATION NUMBER: US/10/437,963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICANT: James M. Anderson
APPLICANT: James M. Anderson
APPLICANT: James M. Van Itallie
TITLE OF INVENTION: Human Occludin, Its Uses and Enhancement of Drug
TITLE OF INVENTION: Aborption Using Occludin Inhibitors
FILE REFERENCE: OCR-754.CIP
CURRENT APPLICATION NUMBER: US/09/891,064A
CURRENT FILING DATE: 2001-06-25
PRIOR APPLICATION NUMBER: US 09/142,732
PRIOR FILING DATE: 1998-09-15
NUMBER OF SEQ ID NOS: 6
SOFTWARE: M. DOS
SOFTWARE: M. DOS
SOFTWARE: M. DOS
SEQ ID NO 3
                                                                                                                                                                                                                                                                                                                                                 Query Match
48.1%; Score 141; DB 9; L
Best Local Similarity 100.0%; Pred. No. 1.3e-08;
Matches 23; Conservative 0; Mismatches 0;
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Pred. No. 3.5e-07;
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; OTHER INFORMATION: construct used in experiments
US-09-891-064A-3
                                                                                                                                                                                                                                            , NAME/KEY: peptide
, OTHER INFORMATION: construct used in experiments
US-09-891-064A-4
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PRIOR APPLICATION NUMBER: US 09/142,732
PRIOR FILING DATE: 1998-09-15
NUMBER OF SEQ ID NOS: 6
SOFTWARE: MS DOS
SEQ ID NO 4
LENGTH: 24
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Similarity 100.0%;
23; Conservative 0
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ORGANISM: Artificial Sequence
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Matches 23; (
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Publication No. US20040077540A1
GENERAL INFORMATION:
APPLICANT: Quay, Steven C.
TITLE OF INVENTION: Compositional Adhesion Molecules For Enhanced Mucosal Delivery Of TITLE OF INVENTION: Therapeutic Compounds
TITLE OF INVENTION: Therapeutic Compounds
TITLE OF INVENTION: Therapeutic Compounds
FILE REFERENCE: 02-03US
CURRENT APPLICATION NUMBER: US/10/601,953
CURRENT PILING DATE: 2003-06-24
PRIOR FILING DATE: 2003-06-28
                                                                                                     APPLICANT: Veiby, Petter Ole
TITLE OF INVENTION: COMPOSITIONS, KITS, AND METHODS FOR
TITLE OF INVENTION: IDENTIFICATION, ASSESSMENT, PREVENTION, AND THERAPY OF BREAST
TITLE OF INVENTION: ADD OVARIAN CANCER
FILE REFERENCE: MRI-039
CURRENT APPLICATION NUMBER: US/10/176,847
CURRENT FILING DATE: 2002-06-21
NUMBER OF SEQ ID NOS: 112
SOFTWARE: FastSEQ for Windows Version 4.0
SEQ ID NO 104
LENGTH: 522
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Batent No. US20020082391A1

GENERAL INFORMATION:
APPLICANT: James M. Anderson
APPLICANT: Christina M. Van Itallie
APPLICANT: Christina M. Van Itallie
TITLE OF INVENTION: Human Occludin, Its Uses and Enhancement of Drug
TITLE OF INVENTION: Absorption Using Occludin Inhibitors
FILE REFREENCE: OCR-754.CIP
CURRENT APPLICATION NUMBER: US/09/891,064A

CURRENT FILING DATE: 2001-06-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 89 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAK 138
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYTDPRAAK 138
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 522;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           / Match 100.0%; Score 293; DB 14; Local Similarity 100.0%; Pred. No. 6.1e-24; Nes 50; Conservative 0; Mismatches 0;
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100.0%; Score 293; DB 15;
Best Local Similarity 100.0%; Pred. No. 6.1e-24;
Matches 50; Conservative 0; Mismatches 0;
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                           Sequence 104, Application US/10176847
Publication No. US20030068636A1
GENERAL INFORMATION:
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SOFTWARE: Patentin version 3.2
SEQ ID NO 900
LENGTH: 522
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                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM: Homo sapiens
US-10-176-847-104
     US-10-176-847-104
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US-09-891-064A-4
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Best Local S
Matches 50
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Squence 67770, Application US/10425114

| Publication No. US20040034888A1
| Publication No. US20040034888A1
| GENERAL INFORMATION:
| APPLICANT: Liu, Jingdong
| APPLICANT: Zhou, Yihua
| APPLICANT: Zhou, Yihua
| APPLICANT: Cao, Yorgwei
| APPLICANT: Cao, Yorgwei
| APPLICANT: Cao, Yorgwei
| TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
| TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
| TITLE OF INVENTION: UNDERR: US/10/425,114
| CURRENT APPLICATION NUMBER: US/10/425,114
| CURRENT PILING DATE: 2003-04-28
| NUMBER OF SEQ ID NOS: 73128
| SEQ ID NO 67770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 64457, Application US/10425114

Sequence 6457, Application No. US20040034888A1

Bublication No. US20040034888A1

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Zhou, Yihua

APPLICANT: Screen, Steven E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

APPLICANT: Tabaska, Jack E

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

FILE REPERENCE: 38-21(53313) B

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

NUMBER OF SEQ ID NOS: 73128
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                                                                                                                                                                                                                 Score 115.5; DB 16; Length 140;
Pred. No. 4.3e-05;
1; Mismatches 13; Indels 21;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 39.1%; Score 114.5; DB 15; Length 336; Best Local Similarity 52.2%; Pred. No. 0.00013; Matches 24; Conservative 4; Mismatches 11; Indels 7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   203 dadsessedeceyeyeyddayrsaaadycybedadadydydreydydd
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                                                                                                                       ; OTHER INFORMATION: Clone ID: SORBI-28MAY03-C119405_1.pep
US-10-767-701-36790
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US-10-A25-114-67770
                                   LOCATION: (1)..(140)
OTHER INFORMATION: unsure at all Xaa locations
PEATURE:
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Best Local Similarity 42.6%;
Matches 26; Conservative
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ORGANISM: Zea mays
                             NAME/KEY: unsure LOCATION: (1)..(
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TITLE OF INVENTION: Rice Nucleic Acid Molecules and Other Molecules Associated With
TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement
FILE REFERENCE: 38-21(5321)B
CURRENT APPLICATION NUMBER: US/10/437,963
CURRENT FILING DATE: 2003-05-14
NUMBER OF SEQ ID NOS: 204966
SEQ ID NO 174945
LENGTH: 174
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Sequence 36790, Application US/10767701

GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Kovalic, David K.
APPLICANT: Zhou, Yihua
APPLICANT: Cao, Yongwei
TITLE OF INVENTION: Plants and Uses Thereof For Plant Improvement
FILE OF INVENTION: Plants and Uses Thereof For Plant Improvement
CURRENT APPLICATION NUMBER: US/10/767,701

CURRENT FILING DATE: 2004-01-29

NUMBER OF SEQ ID NOS: 63128

SEQ ID NO 36790
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                                                                                                                                                                                                                                                                Score 117; DB 16; Length 135;
Pred. No. 2.8e-05;
1; Mismatches 11; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   108 GYGSPGYGGYGSPGYGGGSGYGGGYGGGYGGGSGYGG 149
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US-10-437-963-129038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; OTHER INFORMATION: Clone ID: PAT_MRT4530_7283C.1.pep
US-10-437-963-174945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 174945, Application US/10437963
Publication No. US20040123343A1
GENERAL INFORMATION:
APPLICANT: La Rosa, Thomas J.
APPLICANT: Kovalic, David K.
APPLICANT: Cao, Yihua
APPLICANT: Cao, Yongwei
APPLICANT: Wu, Wei
APPLICANT: Boukharov, Andrey A.
APPLICANT: Barbazuk, Brad
CURRENT FILING DATE: 2003-05-14 WINDER OF SEQ ID NOS: 204966 SEQ ID NO 129038 LENGTH: 135
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Best Local Similarity 46.4%;
Matches 26; Conservative
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ORGANISM: Sorghum bicolor
                                                                                                                                ORGANISM: Oryza sativa
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US-10-767-701-36790
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FEATURE:
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                                                                                                                                                                                                                                                                        3 RGYGTSL-LGGSVGYP-----YGGSGFGSYGSGYGY----GYGYGYG-YGG-Y
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                                                                                                                                                                                                    Gaps
                                                                                                                                                  Score 110.5; DB 15; Length 416;
Pred. No. 0.00042;
4; Mismatches 14; Indels 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 11
US-10-280-114-13

SQUENCE 13, Application US/10280114

Publication No. US20030170257A1

GENERAL INFORMATION:

APPLICANT: Trimnell, Adama Roseanne

APPLICANT: Trimnell, Patricia Anne

APPLICANT: Nuttall, Patricia Anne

TITLE OF INVENTION: Vaccine Comprissing A Tick Cement Frotein

FILE REFERENCE: 2488-1-007

CURRENT APPLICATION NUMBER: US/10/280,114

CURRENT FILING DATE: 2002-10-24

FRIOR FILING DATE: 2000-04-25

FRIOR APPLICATION NUMBER: GB 0010068.5

FRIOR APPLICATION NUMBER: GB 0028666.2

FRIOR FILING DATE: 2000-01-23

NUMBER OF SEQ ID NOS: 17

SOFTWARE: SeqWin99, version 1.02

LENGTH: 134
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 37.0%; Score 108.5; DB 14; Length Best Local Similarity 52.2%; Pred. No. 0.00024; Matches 24; Conservative 4; Mismatches 13; Indels.
                                                            FEATURE:
; OTHER INFORMATION: Clone ID: LIB3960-010-H9_FLI.pep
US-10-425-114-64457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 62338, Application US/10425114
Publication No. US20040034888A1
GENERAL INFORMATION:
APPLICANT: Liu, Jingdong
APPLICANT: Zhou, Yihua
APPLICANT: Kovalic, David K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Zhou, Yihua
Kovalic, David K.
Screen, Steven E
Tabaska, Jack E
                                                                                                                                                      Query Match
Best Local Similarity 43.9%;
Matches 29; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                359 GGPYGA 364
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                    TYPE: PRT
ORGANISM: Zea mays
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US-10-425-114-62338
LENGTH: 416
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APPLICANT:
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j Sequence 17, Application US/10280114

j Publication No. US20030170257A1

j GENERAL INFORMATION:

j APPLICANT: Trimmell, Adama Roseanne

j APPLICANT: Nuttall, Patricia Anne

j TITLE OF INVENTION: Vaccine Comprising A Tick Cement Protein

j FILE REFRENCE: 2480-1.007

CURRENT APPLICATION UNDER: US/10/280,114

CURRENT APPLICATION NUMBER: US/10/280,114

PRIOR APPLICATION NUMBER: GB 0010068.5

PRIOR FILING DATE: 2000-04-25

PRIOR APPLICATION NUMBER: GB 0028606.2

PRIOR APPLICATION NUMBER: GB 0028606.2

PRIOR PILING DATE: 2000-11-23

NUMBER OF SEQ ID NOS: 17

SOFTWARE: SEQWIN99, version 1.02

LENGTH: 154
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Pred. No. 0.00045;
4; Mismatches 12; Indels 25;
                                                                                                                                                                                                                                                                                                                                                                                                                                      36.9%; Score 108; DB 15; Length 174; ilarity 53.2%; Pred. No. 0.00034; Conservative 0; Mismatches 12; Indels 10
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Sequence 16, Application US/10226489
Sequence 16, Application US/10226489
Sequence 16, Application US/10226489
Sequence 16, Application US/10226489
SEQUENCE OF INVENTION: Tassue Cement
TILE REFERENCE: 2488-1-001
CURRENT FILICATION WUMBER: US/10/226,489
CURRENT FILICATION NUMBER: US/09/554,547
PRIOR APPLICATION NUMBER: US/09/554,547
SEQUENCE APPLICATION NUMBER: US/09/554,547
SEQUENCE RELIGION DATE: 2000-07-07
SEQUENCE RELIGION OF SEQUENCE APPLICATION OF SEQUENCE APPLICATION NUMBER: US/09/554,547
SEQUENCE APPLICATION OF SEQUENCE APPLICAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 DRGYGTSLLGGSVGY-----PYGGSGFGSYGSGYGYGYGYGYG
                                                                                                                                                                                                                                                                                           ; OTHER INFORMATION: Clone ID: LIB4730-008-E7_FLI.pep
US-10-425-114-62338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 36.3%;
Best Local Similarity 37.9%;
Matches 25; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; ORGANISM: R. appendiculatus
US-10-226-489-16
NUMBER OF SEQ ID NOS: 73128
SEQ ID NO 62338
LENGTH: 174
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 RGYG--TSLLGGSV-
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                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 25; Conserv
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                                                                                                                                                TYPE: PRT
ORGANISM: Zea mays
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Squence 64513, Application US/10425114

Publication No. US20040034888A1

GENERAL INFORMATION:

APPLICANT: Liu, Jingdong

APPLICANT: Zhou, Yihua

APPLICANT: Screen, Steven E

APPLICANT: APPLICANT: About K.

APPLICANT: Cao, Yongwei

TITLE OF INVENTION: Nucleic Acid Molecules and Other Molecules Associated With

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

TITLE OF INVENTION: Plants and Uses Thereof for Plant Improvement

CURRENT APPLICATION NUMBER: US/10/425,114

CURRENT FILING DATE: 2003-04-28

UNMBER OF SEQ ID NOS: 73128

LENTH: 336
                                                                                                                                                                                                3;
                                                                                                                                                                                                                                                                         215 RGSGGSGVSGNSSGGGYGYSGGYRSTAAAHYGSTAYGAYGRGYGYGGGGAGYGYGGGLGYGSAYG 274
                                                                                                                                                                                                                                           3 RGYG--TSLLGGSV------GYPYGG-SGFGSYGYGYGYG 37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         3 RGYGTSLL-----GGSVGYP-----YGGSGFGSYGSGYGY----GYGYGYG--YG 41
                                                                                                                                         Query Match 36.3%; Score 106.5; DB 14; Length 154; Best Local Similarity 37.9%; Pred. No. 0.00045; Matches 25; Conservative 4; Mismatches 12; Indels 25; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 41.4%; Pred. No. 0.00094;
Matches 29; Conservative 4; Mismatches 14; Indels 23;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; OTHER INFORMATION: Clone ID: LIB3066-032-B8_FLI.pep
US-10-425-114-64513
; TYPE: PRT
; ORGANISM: Artificial Sequence
; FEATURE:
; OTHER INFORMATION: 64P protein fragment
US-10-280-114-17
                                                                                                                                                                                                                                                                                                                                                                        1111
108 SAYGGY 113
                                                                                                                                                                                                                                                                                                                                       38 YGYGGY 43
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ORGANISM: Zea mays
FEATURE:
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US-10-425-114-64513
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Search completed: April 1, 2005, 10:03:20 Job time : 135.856 secs

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1 10:35:52 2005

Fri Apr

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GenCore version 5.1.6
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April 1, 2005, 09:36:47; Search time 5.32995 Seconds (without alignments) 902.605 Million cell updates/sec Run on:

US-09-891-064A-2_COPY_89_138 293 1 WDRGYGTSLLGGSVGYPYGG..........GYGYGYGYGYGGYTDPRAAK 50 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

" "<del>"</del>

283416 segs, 96216763 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* 1 2 6 4 ..... Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		di			SUMMARIES	
Result No.	Score	Query Match	Length	DB		Description
-	293	100.0	522	7	G02533	occludin - human
7	118.5	40.4	80	~	B45466	glycine/tyrosine-r
٣	116	39.6	180	~	JC7876	prion protein homo
4	112	38.2	210	~	C87305	hypothetical prote
S	112	38.2	404	7	B84745	٠.
9	110.5	37.7	102	7	T20557	hypothetical prote
7	109	37.2	504	7	A49467	occludin - chicken
œ	108.5	37.0	155	н	KRCHS	keratin, scale - c
6	108	36.9	168	7	C24255	chorion class B pr
10	107.5	36.7	119	~	504513	class B
11	106.5	36.3	227	~	T15772	hypothetical prote
12	106	36.2	129	~	A24255	
13	105	35.8	91	7	S01421	М
14	105	35.8	151	7	804515	chorion class B pr
15	105	35.8	353	7	B34504	
16	104	35.5	75	~	A89016	protein B0213.6 [i
17	104	35.5	183	н	KNRZG2	glycine-rich cell
18	104	35.5	200	~	S10334	glycine-rich prote
19	103	35.2	186	7	828021	rab18 protein - Ar
20	102.5		23	7	\$12520	core protein A1 -
21	102		386	~	S51436	probable membrane
22	101.5	34.6	126	~	804514	chorion class B pr
23	101.5	34.6	345		B41732	neous nu
24	101	34.5	177	~	A31204	eggshell protein p
25	100.5	34.3	69	~	B89016	protein B0213.5 [i
56	100.5	34.3	165	~	T03583	glycine-rich RNA-b
27	100	34.1	301	~	JW0079	heterogeneous nucl
28	100	34.1	371	~	E88633	ш
53	100	34.1	526	-	KRBOVI	keratin, 54K type

glycine-rich prote	hypothetical prote	probable ATP-depen	single stranded D	probable ATP-depen	keratin, 64K type	glycine-rich cell	RNA-binding protei	RNA-binding protei	hypothetical prote	glycine-rich RNA-b	glycine/proline-ri	keratin 3, type I,	keratin 10, type I	protein B0213.2 [i	hypothetical prote
KNNT2S	T15126	T22917	S56750	H84854	KRXL2A	KNRZG1	B47369	A47369	T21956	S12312	S65780	KRXL	A31994	E89016	T26867
Н	N	N	Н	N	-	-	~	~	N	~	~	н	~	N	7
214	259	561	353	633	425	165	308	321	407	168	177	486	561	72	87
34.0	34.0	34.0	33.8	33.8	33.6	33.4	33.4	33.4	33.4	33.3	33.1	33.1	33.1	32.9	32.9
	99.5 34.0		99 33.8	99 33.8	98.5 33.6	_	98 33.4				97 33.1				96.5 32.9

## ALIGNMENTS

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C;Species: How sapiens (man)
C;Species: How sapiens (man)
C;Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 09-Jul-2004
C;Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 09-Jul-2004
C;Accession: G05333
R;Van Itallie, C.M.
submitted to the EMBL Data Library, April 1996
A;Reference number: H01403
A;Reference number: H01403
A;Accession: G05533
A;Accession: G05533
A;Accession: G05533
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Molecule type: MNNA
A;Residues: 1-522 eVAN>
A;Cross-references: UNIRROT:Q16625; EMBL:U53823; NID:g1322281; PIDN:AAB00195.1; PID:g132
C;Superfamily: occludin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
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                                                                                                                                                                                                                                                                                                                                                                                                                      Length 522;
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                                                                                                                                                                                                                                                                                                                                                                                                                    / Match 100.0%; Score 293; DB 2; Local Similarity 100.0%; Pred. No. 6.6e-22; Nes 50; Conservative 0; Mismatches 0;
                                                 occludin - human
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Matches
RESULT 1
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qa	89 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYTDPRAAK 138
RESOLT 2 B45466 glycine/ty	<pre>KESOUT 2 B45466 glycine/tyrosine-rich keratin-associated hair protein KAP6.1 - rabbit C.Conoice. Orietalized auriculus (Armont's rabbit)</pre>
C;Species C;Date: 2: C;Accessic R;Fratini, T. Biol. (	Cippectes: Olycologus Cuniculus (Commeric Labor) Cipate: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004 Cipates: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004 Cipates: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004 Cipates: 21-Sep-1993 #sequence_revision 18-Nov-1994 #text_change 09-Jul-2004 J. Biol. Chem. 268, 4511-4518, 1993

A;Title: Sequence, expression, and evolutionary conservation of a gene encoding a glycin A;Reference number: A45466; MUID:93179467; PMID:7680040
A;Accession: B45466
A;Molecule type: DNA
A;Residues: 1-80 <FRA>
A;Coss-references: UNIPROT:Q02957; GB:M95718; NID:g165446; PIDN:AAA31379.1; PID:g165447
A;Note: sequence extracted from NCBI backbone (NCBIN:125967, NCBIP:125968)

. . Query Match 40.4%; Score 118.5; DB 2; Length 80; Best Local Similarity 57.4%; Pred. No. 2.3e-05; Matches 27; Conservative 1; Mismatches 10; Indels

'n

Gaps

3 RGYGTSLLGGSVGYPYGGSGFG---SYGSGY-----GYGYGYGYG 41 12 RGYGCCGYGG-LGYGYGGGGGSYYGCGYRRLGCGYGCGYGYGG 57 ઠે 셤

RESULT 3 JC7876

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A;Map position: 2
C;Superfamily: helix-destabilizing protein; ribonucleoprotein repeat homology
                                                                                                                                                                                                                                4 GYGTSLLGGSVGY----
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Best Local Similarity 55.84
Matches 24; Conservative
                                                                                                                                                                       31; Conservative
                                                                                                                                                                                                                                                                                                                                                                           ||| :| |
GGYGNPAGA 271
                                                                                                                                                                                                                                                                                                                                        41 GGYTDPRAA 49
                                                                                                                                          Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Residues: 1-102 <WIL>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Gene: CESP: F07H5.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       occludin - chicken
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                                                                                                                                                                          Matches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein CC0452 [imported] - Caulobacter crescentus
C;Species: Caulobacter crescentus
C;Species: Caulobacter crescentus
C;Species: O-Apr-2001 #text_change 09-Jul-2004
C;Accession: C87305
R;Nierman, W.C.; Feldblyum, T.V.; Paulsen, I.T.; Nelson, K.E.; Eisen, J.; Heidelberg, J.
B; Laub, M.T.; DeBoy, R.T.; Dodson, R.J.; Durkin, A.S.; Gwinn, M.L.; Haft, D.H.; Kolon
n, J.; Ermolaeva, M.; White, O.; Salzberg, S.L.; Shapiro, L.; Venter, J.C.; Fraser, C.M.
Proc. Natl. Acad. Sci. U.S.A. 98, 4136-4141, 2001
A;Title: Complete Genome Sequence of Caulobacter crescentus.
A;Recession: C87309
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-210 <STO>
A;Cross-references: UNIPROT:Q9AAZO; GB:AB005673; NID:g13421623; PIDN:AAK22439.1; GSPDB:G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 5
B84745
B84745
Probable RNA-binding protein [imported] - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 09-Jul-2004
C;Accession: B84745
R;Lin, X:; Kaul, S.; Rouneley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujii, C.Y.;
N.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, L.
euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter, J.
Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana.
A;Reference number: A84420; MUID:20083487; PMID:10617197
A;Retus: preliminary
A;Molecule type: DNA
A;Retus: preliminary
A;Molecule type: DNA
A;Reterences: UNIPROT:022791; GB:AE002093; NID:g2459445; PIDN:AAB80680.1; GSPDB:GN
C;Genetics:
A;Genetics:
A;Genetics:
Drion protein homolog - Fugu rubripes
C; Species: Pugu rubripes
C; Date: 09-Dec-2002 #text_change 09-Jul-2004
C; Date: 09-Dec-2002 #sequence_revision 09-Dec-2002 #text_change 09-Jul-2004
C; Accession: JC7876
F; Suzuki, T.; Kurokawa, T.; Hashimoto, H.; Sugiyama, M.
Biochem: Biophys. Res. Commun. 294, 912-917, 2002
A; Title: cDNA sequence and tissue expression of Fugu rubripes prion protein-like: A cand A; Accession: JC7876; MUID:22057338; PMID:12061771
A; Accession: JC7876
A; Molecule type: mANA
A; Residues: 1-180 <SUZ>
A; Residues: 1-180 <SUZ>
C; Comment: This protein is a real orthologue of human prion protein and plays some roles C; Genetics:
A; Gene: prp
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. 0.00025; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 116; DB 2; Length 18 Pred. No. 8.8e-05; 2; Mismatches 12; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGY--GGYTD 45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 38.2%; Score 112; DB 1 Similarity 65.5%; Pred. No. 0.00 19; Conservative 2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | | | | | | | | | GKHGGWYGGPGYDAYGYBYGY 143
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 59.1%;
Matches 26; Conservative
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Matches 19; Conserv
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A;Molecule_type: mRNÅ
A;Residues: 1-504 <FUR>
A;Residues: 1-504 <FUR>
C;Superfamily: occludin
C;Keywords: liver; membrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: UNIPROT:Q19176; EMBL:Z68314; PIDN:CAA92658.1; GSPDB:GN00020; CESP:F0
A;Experimental source: clone F07H5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Accession: A49467
R;Furuse, M.; Hirase, T.; Itoh, M.; Nagafuchi, A.; Yonemura, S.; Tsukita, S.; Tsukita, J. Cell Biol. 123, 1777-1788, 1993
A;Title: Occludin: a novel integral membrane protein localizing at tight junctions. A;Reference number: A49467; MUID:94103322; PMID:8276896
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                                                           9
                                                                                                                                                                      210 GYGGS--GGS-GYEGRVDSNRYMQPONTGSGYPPYGGSG---YGTGYGYGSGGGGG-GF 262
                                                                                                                       40
                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Species: Caenorhabditis elegans
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: T20557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Species: Gallus gallus (chicken)
C;Date: 03-May-1994 #sequence_revision 03-May-1994 #text_change 09-Jul-2004
                                                                                                                    -----PYGGSGFGSYGSGYGY---GYGYGYGY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 102;
38.2%; Score 112; DB 2; Length 404; 44.9%; Pred. No. 0.00047; tive 3; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                37.2%; Score 109; DB 2; Length 504;
55.8%; Pred. No. 0.0011;
tive 1; Mismatches 14; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    80 WDYGYG---LGGAYGTGLGGFYGSNYYGSGLSYSYGYGGYYGG 119
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 WDRGYGTSLLGGSVGYPYGG-SGFGSYGSGYGYGYGYGYGYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 37.7%; Score 110.5; DB 2; Best Local Similarity 50.0%; Pred. No. 0.00018; Matches 26; Conservative 1; Mismatches 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                       hypothetical protein P07H5.6 - Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Map position: 2
A;Introns: 33/1, 85/1
C;Superfamily: Arabidopsis glycine-rich protein 3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R;Steward, C.
submitted to the EMBL Data Library, December 1995
A;Reference number: Z19292
A;Accession: T20557
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1 10:35:52 2005

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;Alternate names: beta keratin

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A;Cross-references: UNIPROT:P08914; EMBL:X12838; NID:g5813; PIDN:CAA31323.1; PID:g66560?
C;Superfamily: chorion class A protein pc292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Cross-references: UNIPROT: Q18464; EMBL: U46753; NID: 91166623; PID: 91166629; PIDN: AAA857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RjTsitilou, S.G.; Rodakis, G.C.; Alexopoulou, M.; Kafatos, F.C.; Ito, K.; Iatrou, K. Sabdo J. 2, 1845-1852, 1983
Marbo J. 2, 1845-1852, 1983
A;Title: Structural features of B family chorion sequences in the silkmoth Bombyx mori, A;Reference number: S01420; MUID:84057707; PMID:6571700
                                                                                                                                                                                                                                            4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein C34F11.8 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 09-Jul-2004
C;Accession: T15772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chorion class B protein (clone M2807) - silkworm (fragment)
C;Species: Bombyx mori (silkworm)
C;Date: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004
C;Accession: S04513
                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
A; Note: this sequence was submitted to the EMBL Data Library, Jun-1989
                                               A,Map position: 2
C,Superfamily: chorion class A protein pc292
P;1-21/Domain: signal sequence #status predicted <SIG>
P;22-168/Product: chorion class B protein L11 #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                             110 GIGEILYGCGNGAVGITREGGLGFGAGYGGGYGGYGGYGGYGGYGGYGGY 159
                                                                                                                                                                                                                                            10;
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                                                                                                                                                                                                                                                                                              4 GYGTSLLG---GSVGYP-YGGSGPGS-YGSGYGYGY-----GYGYGYGY 43
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           <u>..</u>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 119;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 43
                                                                                                                                                                                 Query Match 36.9%; Score 108; DB 2; Length 168; Best Local Similarity 54.0%; Pred. No. 0.00051; Matches 27; Conservative 2; Mismatches 11; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ---SGFGSYGSGYGYGYGYGYGYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RiBentley, D. the EMBL Data Library, January 1996 submitred to the EMBL Data Library, January 1996 A;Description: The sequence of C. elegans cosmid C34F11. A;Reference number: Z18400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      36.7%; Score 107.5; DB 2
52.1%; Pred. No. 0.00042;
tive 4; Mismatches 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       36.3%; Score 106.5; DB 2
46.9%; Pred. No. 0.00096;
vative 1; Mismatches 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: DNA
A;Residues: 1-227 <BEN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   chorion class A protein L11 precursor - silkworm C;Species: Bombyx mori (silkworm)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Gene: CESP:C34F11.8
A;Introns: 33/1; 73/3; 110/2; 189/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5 YGTSLLGGSVGY--PYGG--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25; Conservative
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Best Local Similarity
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A; Residues: 1-119 <TSI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Accession: S04513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Accession: T15772
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
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C:Species: Gallus gallus (chicken)
C:Species: Gallus gallus (chicken)
C:Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 09-Jul-2004
C:Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 09-Jul-2004
C:Date: 17-Mar-1987 #sequence_revision 17-Mar-1987 #text_change 09-Jul-2004
C:Date: 17-178, 1984
Fidecession: A:Date: A:Date: A:Date: A:Date: A:Milton, S.D.; Rogers, G.E.
A:Title: A comparison of genomic coding sequences for feather and scale keratins: struct A:A:Cession: A:Date: A:Date:
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A; Accession: C24255
A; Accession: C24255
A; Accession: C24255
A; Rocession: C24255
A; Rocession: D34
A; Rocession: D4235
A; Cross-references: UNIPROT:P08827; GB:X15557; GB:X04028; GB:X04029; GB:X04030; GB:X0403
A; A; Ccossion: D24255
A; Rocession: D2425
A; Rocession: D24255
A; Rocession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Title: Gene evolution and regulation in the chorion complex of Bombyx mori. Hybridizat; Reference number: S05913; MUID:90040707; PMID:2810362
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 90-155 <WIL>
A; Molecule type: mRNA
A; Residues: 90-155 <WIL>
A; Residues: 90-155 <WIL>
A; Cross-references: GB: M25642; NID: 9212231; PIDN: AAA48931.1; PID: 921232
A; Cross-references: GB: M25642; NID: 9212231; PIDN: AAA48931.1; PID: 921232
A; Note: this mRNA was designated clone CSK12. See entry A60136 for clone CSK9
R; Sawyer, R.H.; Shames, R.B.
Curr. Top. Dev. 'Biol. -22, 235-253, 1897
A; Tale: Expression of beta-keratin genes during development of avian skin appendages.
A; Reference number: 150168
A; Accession: 150168
A; Statues preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Residues: 137-155 <SAW>
A; Cross-references: GB: M28422; NID: 9211271; PIDN: AAA48631.1; PID: 9211272
C; Supperfamily: feather keratin
C; Keywords: duplication; epidermis; fibrous protein; horn; integument; tandem repeat
F; 70-128/Region: 13-residue repeats (G-G-S-S-L-G-Y-G-Y)
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C;Species: Bombyx mori (silkworm)
C;Date: 30-Jun-1988 #sequence revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: C24255; D24255; S05914
R;Spoerel, N.; Nguyen, H.T.; Kafatos, F.C.
J. Mol. Biol. 190, 23-35, 1986
A;Title: Gene regulation and evolution in the chorion locus of Bombyx mori. Structural A;Reference number: A92929; MUID:87060979; PMID:3023635
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Status: nucleic acid sequence not shown; translation not shown; Molecule type: DNA; Residues: 1-17 <SP3>
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Query Match 37.0%; Score 108.5; DB 1; Best Local Similarity 50.9%; Pred. No. 0.00043; Matches 27; Conservative 0; Mismatches 15;

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A;Residues: Î-17 <SP3> A;Cross-references: EMBL:X15558; NID:g5771; PID:g5774

Accession: S05914

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GIGEILYGCGNGAVGITREGGLGYGAGYGGGYGLGYGGYGGGYGLGYGGY 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;Status: nucleic acid sequence not shown;Molecule type: DNA
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Cross-references: GB:M29064
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Residues: 1-353 <BUR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Status: preliminary
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            셤
C,Date: 30-Jun-1988 #Bequence_revision 30-Jun-1988 #text_change 09-Jul-2004
C;Accession: A24255
S;Spoerel. N.; Nguyen, H.T.; Kafatos, P.C.
J; Mol. Biol. 190, 23-35, 1986
A;Title: Gene regulation and evolution in the chorion locus of Bombyx mori. Structural a A;Reference number: A22929; MUID:87060979; PMID:3023635
A;Accession: A24255
A;Molecule type: DNA
A;Accession: A24255
A;Molecule type: DNA
A;Cross-references: UNIPROT:P08826; GB:X15557; GB:X04028; GB:X04029; GB:X04030; GB:X0403
C;Superfamily: chorion class A protein pc292
C;Superfamily: chorion class A protein L11 #status predicted <MAT>
F;22-129/Product: chorion class A protein L11 #status predicted <MAT>
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C;Species: Bombyx mori (silkworm)
C;Accession: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004
C;Accession: SG; Rodakis, G.C.; Alexopoulou, M.; Kafatos, F.C.; Ito, K.; Iatrou, K.
EMBO J. 2, 1845-1852, 1983
A;itile: Structural features of B family chorion sequences in the silkmoth Bombyx mori, A;Reference number: S01420; MUID:84057707; PMID:6571700
A;Accession: S04515
A;Accession: S04515
C;Accession: S04515
C;Superiamity: chorion class A protein pc292
F;1-4/Domain: signal sequence (fragment) #status predicted <SIG>F;1-4/Domain: signal sequence (fragment) #status predicted <MAT>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         chorion class B protein (clone M3A5) - silkworm (fragment)
C;Species: Bombyx mori (silkworm)
C;Species: Bombyx mori (silkworm)
C;Species: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004
C;Accession: S01421
R;Tsitilou, S.G.; Rodakis, G.C.; Alexopoulou, M.; Kafatos, F.C.; Ito, K.; Iatrou, K.
BMBO J. 2, 1845-1852, 1983
A;Title: Structural features of B family chorion sequences in the silkmoth Bombyx mori, A;Reference number: S01421
A;Reference number: S01421
A;Accession: S01421
A;Accession: S01421
A;Accession: S01421
A;Accession: J-91 cTSI-
A;Cross-references: UNIPROT:P08915; EMBL:X12840; NID:g5816; PIDN:CAA31325.1; PID:g5817
C;Superfamily: chorion class A protein pc292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4;
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C;Species: Bombyx mori (silkworm)
C;Date: 07-Jun-1990 #sequence_revision 07-Jun-1990 #text_change 09-Jul-2004
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Best Local Similarity 60.5%; Pred. No. 0.00064;
Matches 26; Conservative 1; Mismatches 12; Indels
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Pred. No. 0.00058;
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NyAlternate names: heterogeneous ribonuclear particle protein B1; hnRNP protein B1; NEPH N; Contains: heterogeneous nuclear ribonucleoprotein A2 (; Species: Homo sapiens (man) (nan) (nan
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Nucleic Acids Res. 22, 1996-2002, 1994
A;Title: Two homologous genes, originated by duplication, encode the human hnRNP protein A;Reference number: $48057; WUID:94301779; PMID:8029005
A;Accession: $48057
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Residues: 1-353 <KOZ>
A;Cross-references: UNIPROT:P22626; GB:D28877; NID:9565642; PIDN:BAA06031.1; PID:9565643
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A; Introns: 2/3; 14/3; 51/3; 100/3; 171/1; 205/1; 232/1; 253/1; 293/1; 334/1
A; Introns: 2/3; 14/3; 51/3; 100/3; 171/1; 205/1; 232/1; 253/1; 293/1; 334/1
C; Superfamily: helix-destabilizing protein; ribonucleoprotein repeat homology C; Reywords: alternative splicing; duplication; nucleus; RNA binding F;1-2,15-353/Domain: heterogeneous ribonuclear particle protein A2 <HA2>
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Nolecule type: DNA
Residues: 1-353 ABLA.
Residues: 1-353 ABLA.
Residues: BMBL:U09122
Prasad, S.; Walent, J.; Dritschilo, A.
Rocken-Biophys. Res. Commun. 204, 772-779, 1994
Idochem. Biophys. Res. Commun. 204, 772-779, 1994
Tiltle: ADP-ribosylation of heterogeneous ribonucleoproteins in HeLa cells.
Reference number: PC2221; MUID:95071393; PMID:7980541
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Residues: 'XXX', 88-86,'X', 88-93,'X',95-100 <PRA>
Reperimental source: Hela cells
Note: this protein was shown to be ADP-ribosylated
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A;Residues: 63-69;204-212;214-220,'F',221-228 <BAU>
RESULT 15
B34504
heterogeneous nuclear ribonucleoprotein B1 - human
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A;Cross-references: GDB:377778; OMIM:600124
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26 244 88.7 505 2 AAW36053 27 243 88.4 48 3 AAY96006 29 243 84.4 48 3 AAY96007 30 232 84.4 48 8 ADK74399 31 22.5 80.5 51 3 AAY96009 32 152 55.3 50 8 ADK74400 33 152 55.3 50 8 ADK74401 34 133 48.4 44 3 AAB3773 35 108 39.3 19 8 ADI46332 36 34.9 17 8 ADI46331 40 34.2 21 6 ABP70559 41 94 34.2 21 6 ABP70559 42 90 32.7 20 6 ABP70554 43 32.0 15 8 ADI46336 44 88 32.0 15 8 ADI46336 45 88 32.0 15 8 ADI46336	Aaw36053 Canine oc Aay96006 Mouse occ	Adr74399 Mouse occ Aav96007 Dog occlu	Adr74400 Dog occlu	Aay96009 Mammalian Aay96008 Rat kanga	_	Aab35733 Human occ	Adi46332 Permeabil	Adi46338 Permeabil	Abp70563 Peptide d	Adi46337 Permeabil	Adi46331 Permeabil	Abp70555 Analogue	Abp70559 Analogue	Abp70554 Analogue	Abp70560 Analogue	Adi46336 Permeabil	Abp70553 Analogue
243 88.4 243 88.4 232 232 88.4 231.5 88.4 152 232 84.4 1152 55.3 1163 48.4 1100 36.4 99 36.0 94 34.2 90 32.7 90 32.7 88 32.0	AAW36053 AAY96006	ADR74399 AAY96007	ADR74400	AAY96009 AAY96008	ADR74401	AAB35733	ADI46332	AD146338	ABP70563	ADI46337	ADI46331	ABP70555	ABP70559	ABP70554	ABP70560	AD146336	ABP70553
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## ALIGNMENTS

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New diagnostic and therapeutic polynucleotides and polypeptides, useful in diagnosing a condition, disease or disorder associated with human molecules, e.g. autoimmune or inflammatory disorders, in gene therapy or in gene mapping.
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Harthshorne TA, Suchorolski MT, Altus CM, Pitts SJ, Elder LV;
Mooney EM, Delegeane AM, Panesar IS, Banville SC, Reddy TP;
Stevens KA, Blanchard JL, Panzer SR, Wang X, Au AP, Gerstin EH;
Peralta CH, Anderson SB, Rioux P, Shen EJ, Wu MC, Stuve LL;
Lagace RE, Spiro PA, Stewart RA, Wingrove J, Vitt UA, Kircon ES;
Xu Y, Kwong M, Policky JL, Hurwitz BL, Ma Y, Jackson JL, Gietzen Patury S, Shi X, Suarez CJ,
                                                                                                                                                                                                                                                                                                                                      gene therapy; human diagnostic and therapeutic polynucleotide; dithp.
                                                                                                                                                                                                                                                            Human diagnostic and therapeutic pprotein SEQ ID NO:5234
                               ABM84985 standard; protein; 508 AA
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12-SEP-2002; 2002US-0410260P.
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                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
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                                                                                                            ABM84985;
ABM84985
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The invention relates to novel diagnostic and therapeutic polynucleotides selected from one of the 2722 sequences defined in the specification. A polynucleotide of the invention may have a use in gene therapy. The human diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be

Claim 27; Page; 190pp; English.

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used to diagnose a particular condition, disease or disorder associated with human molecules, e.g. cell proliferative disorders, autoimmune/inflammatory disorder, developmental disorder, endocrine disorder, neurological disorders, gastrointestinal disorders, or infections caused by virus, bacteria, fungi or parasite. The dithp molecules may also be used in genetic mapping, in identifying individuals from minute biological samples, in detecting single nucleotide polymorphisms, as molecular weight markers, and for somatic or germline gene therapy. The present sequence represents a dithp protein of the invention. Note: The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from WIPO at www.wipo.int/pct/en/sequences/listing.htm
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gietzen D;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Wright RJ, Bruns CM, Marjanovic MM, Shen F;
TA, Suchorolski MT, Altus CM, Pitts SJ, Elder LV;
Delegeane AM, Panesar IS, Banville SC, Reddy TP;
Blanchard JL, Panezer SR, Wang X, Au AP, Gerstin EH;
Anderson SB, Rioux P, Shen EJ, Wu MC, Stuve LL;
Spiro PA, Stewart EA, Wingrove J, Vitt UA, Kirton ES;
MM, Policky JL, Hurwitz BL, Ma Y, Jackson JL, Gletze
                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gene therapy; human diagnostic and therapeutic polynucleotide; dithp.
                                                                                                                                                                                                                                                                                                                                        196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIA 246
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100.0%; Pred. No. 1.5e-27;
iive 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                                                                                                                   51; Conservative
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                                                                                                                                                                                                                                                                    Local Similarity
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S, Shi X,
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N-PSDB; ACN43638.
                                                                                                                                                                                                                    Sequence 508 AA;
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Peralta CH,
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABM84986;
                                                                                                                                                                                                                                                    Query Match
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The invention relates to novel diagnostic and therapeutic polynucleotides selected from one of the 2722 sequences defined in the specification. A polynucleotide of the invention may have a use in gene therapy. The human diagnostic and therapeutic polynucleotides (dithp) or polypebides may be used to diagnose a particular condition, disease or disorder associated

Claim 27; Page; 190pp; English.

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         which is a constituent protein of membrane tight junctions. Antibodies raised against the protein of membrane tight junctions. Antibodies raised against the protein are used to assay for occludin in samples, and immunofluorescent cell-staining). The membranes (e.g. by used for screening of substances which potentially influence occludin expression. Therapeutic polymucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the brain barrier. Primers that hybridise to the occludin DNA sequence can be used to detect occludin DNA by PCR
with human molecules, e.g. cell proliferative disorders, autoimmune/inflammatory disorder, developmental disorder, endocrine disorder, neurological disorders, gastrointestinal disorders, or infections caused by virus, bacteria, fungi or parasite. The dithp molecules may also be used in genetic mapping, in identifying individuals from minute biological samples, in detecting single nucleotide polymorphisms, as molecular weight markers, and for somatic or germline gene therapy. The present sequence represents a dithp protein of the invention. Note: The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from WIPO at www.wipo.int/pct/en/sequences/listing.htm
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             The present sequence represents human occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. Antibodies
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DNA encoding human, dog and mouse occludin(s) - useful for screening for substances influencing occluding expression.
                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                              196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
                                                                                                                                                                                                                                                                                                                                                       1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
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                                                                                                                                                                                                                                                                           100.0%; Score 275; DB 8; Length 508; 100.0%; Pred. No. 1.5e-27; ive. 0; Mismatches 0; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW36052 standard; protein; 522
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                                                                                                                                                                                                                                                                                             Best Local Similarity 100.
Matches 51; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW36052;
                                                                                                                                                                                                                                                                                 Query Match
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                                                                                                                                                                                                                                                                                                    Occludin; inhibitor; human; drug absorption; drug delivery; gene therapy; tissue permeability; cell adhesion.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Isolated human occludin protein - useful for increasing drug delivery across endothelial or epithelial barriers, or for reducing tissue permeability.
                                 Gaps
                                                                                  196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
                                                              51
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                                                             1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA
Length 522;
                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                               196. .246
/label= Extracellular loop
/note= "inhibitor peptide (Claim 10)"
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/label= Extracellular_loop
/note= "inhibitor peptide (Claim
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100.0%; Pred. No. 1.5e-27;
iive 0; Mismatches 0;
Score 275; DB 2;
Pred. No. 1.5e-27;
Mismatches 0;
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                                                                                                                                                                          AAW34638 standard; protein; 522 AA
100.0%; Sc
100.0%; Pr
tive 0;
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                                 Conservative
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N-PSDB; AAT93752.
              Local Similarity
ses 51; Conserv
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                                                                                                                                                                                                                                                                        Human occludin.
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 Query Match
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                Best Loc
Matches
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This invention relates to a pharmaceutical composition used for gene therapy, comprising a nucleic acid encoding a therapeutic gene and a promoter, a transfection vehicle and an agent to disrupt the function of the junctional complex in the cells. The pharmaceutical composition has cytostatic, cardiant, vasotropic, antiinflammatory and antilipaemic activity. The pharmaceutical composition is useful for gene therapy and for enhancing efficiency of gene delivery to cells. The composition is useful for gene therapy of cystic fibrosis, inflammatory or fibrotic lung diseases, peripheral vascular disease, coronary arterial diseases, restenosis, hypercholesterolaemia and cancer. The present sequence represents the human occludin protein. Occludin is used in the invention to determine the effect of the junctional inhibitors used in the
                                                                                                                                                                                                                                           Pharmaceutical composition; gene therapy; junctional complex disruption; cytostatic; cardiant; vasotropic; antiinflammatory; antiippaemic; cytostatic fibrosis; inflammatory disease; fibrotic lung disease; peripheral vascular disease; coronary arterial disease; restenosis; hypercholesterolaemia; cancer; human; occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Novel pharmaceutical composition useful for gene therapy, comprises nucleic acid encoding therapeutic gene and a promoter, transfection vehicle and an agent which disrupts function of junctional complex in
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196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
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100.0%; Pred. No. 1.5e-27;
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                                                                                                                                                                                                            Human occludin amino acid sequence.
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                                                                                                     AAB35731 standard; protein; 522
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99GB-00009073.
99GB-00009297.
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(UYNC-) UNIV NORTH CAROLINA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 522 AA;
                                                                                                                                                                                                                                                                                                                                                                                       WO200062815-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              pharmaceutical
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-APR-1999;
20-APR-1999;
22-APR-1999;
13-SEP-1999;
                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            L5-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Boucher RC,
                                                                                                                                                                                                                                                                                                                                                                                                                       26-OCT-2000
                                                                                                                                         AAB35731;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cells.
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Matches
                                                                      RESULT 5
                                                                                      AAB3573
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Gaps

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Length 522; Indels

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Query Match Best Local Similarity 100.( Matches 51; Conservative

RESULT 6 ABJ3707

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The invention discloses a composition comprising two or more isolated rate or human polymucleotides or a polymucleotide which represents a fragment, derivative or allalic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polymucleotide a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that is differentially expression of the polymucleotide sequence that increases or decreases the expression of the polymucleotide sequence the expression of a polymucleotide sequence which is differentially expression of a polymucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound which regulates the activity of one or more of the polymucleotides, a method for producing a pharmaceutical composition, a method for identifying a compound useful in treating pain and a pharmaceutical composition compound useful in treating pain and a pharmaceutical composition compound useful in treating pain and a pharmaceutical composition compound useful in treating pain and a pharmaceutical composition compound useful in animal (e.g. spinal segmental nerve injury (SNI)) in an animal (e.g. gene presented is a human protein (described in Table 3 of the sequence data for this patent did not form part of the printed of the sequence data for this patent did not form part of the printed security and obtained in electronic form directly from WIPO at the sequence data for this patent did not form part of the printed security and patent did not form directly from WIPO at the sequence data for this patent did not form part of the printed security and patent did not form datal or the sequence data for this patent did not form datal or the sequence data for this patent did not form datal or the sequence data for this patent did not form datal or the datal datal datal datal datal datal da
                                                                                                                                                                                                                                                                                                                                                                                                           New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mucosal delivery; permeabilising peptide;
mucosal epithelial paracellular transport; epithelial junction;
epithelial membrane adhesive protein; junctional adhesion molecule; JAM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 275; DB 7; Length 522; 100.0%; Pred. No. 1.5e-27;
                                                                                                                                                                                                                                                                                 Costigan M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ftp.wipo.int/pub/published_pct_sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADI47189 standard; protein; 522 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 1; Page; 1017pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human occludin protein sequence.
                                                                                                                                                                                                                                                                                 Befort K,
                                                                                               14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                  14-AUG-2002; 2002WO-US025765.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       06-MAY-2004 (first entry)
                                                                                                                                                                                               (GEHO ) GEN HOSPITAL CORP.
(FARB ) BAYER AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity 100.
                                                                                                                                                                                                                                                                              Woolf C, D'urso D,
                                                                                                                                                                                                                                                                                                                                 WPI; 2003-268312/26.
GENBANK; NP_002529.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 522 AA;
27-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADI47189;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADI47189
ID ADI4
XX AC ADI4
XX DT 06-M
DT 06-W
XX MWCC
KW MUCC
KW RUCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 8
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           The invention comprises a method for assessing whether a patient is afflicted with breast cancer or ovarian cancer. The method involves the use of specific DNA markers. The method of the invention is useful in the detection and treatment of ovarian and breast cancer. Amino acid sequences ABJ37025 - ABJ37080 represent human breast/ovarian cancer-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Determining the presence of breast cancer in an individual, involves
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; pain; neuronal tissue; gene therapy;
spinal segmental nerve injury; chronic constriction injury; CCI;
spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GVNPTAQSSGSLYGSQIYALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 275; DB 6; Length 522; 100.0%; Pred. No. 1.5e-27; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                 Human breast cancer / ovarian cancer related protein #52.
                                                                                                                                                                                                                                                    Human; cytostatic; breast cancer; ovarian cancer.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 223-224; 233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human Protein NP_002529, SEQ ID NO 12226.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    using specific polynucleotide markers.
                                             ABJ37076 standard; protein; 522 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADD46545 standard; protein; 522 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JUN-2001; 2001US-0300159P. 27-JUN-2001; 2001US-0301351P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             21-JUN-2002; 2002WO-US019773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (MILL-) MILLENNIUM PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    51; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (revised)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2003-267848/26.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       N-PSDB; ABT31945.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     related proteins
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 522 AA;
                                                                                                                                                                                                                                                                                                                                                      WO2003000012-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO2003016475-A2
                                                                                                                                                                                                                                                                                                         Homo sapiens.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sapiens
                                                                                                                                               01-MAY-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        02-DEC-2004
29-JAN-2004
                                                                                                                                                                                                                                                                                                                                                                                                           03-JAN-2003
                                                                                                  ABJ37076;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Veiby OP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADD46545;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
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Matches

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Indels

Homo sapiens.

08-JAN-2004

Quay SC;

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The invention relates to recombinant nucleic acid sequences that encode both an angiogenic factor antagonist and a vascular endothelial structure regulator, collectively referred to as a KV protein. KV DNA and proteins, and also cells and compositions containing the sequences, are useful in treating or preventing cancer or angiogenesis in mammals, in particular humans. KV proteins are also useful for regulation of the development of blood vessels and their formation, in the vascular endothelium and/or tumour. The KVB702 gene and its fragments are useful in transfection of human epithelial cells and to generate products suitable for angiogenesis intervention. This sequence represents the human J36 protein used in
                                                                                                                                                                                                                                                            Novel nucleic acid for inhibition of angiogenesis and prophylaxis or treatment of cancer, comprises both an angiogenic factor antagonist and a vascular endothelial structure regulator.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cyclic peptide cell adhesion modulating agents, useful for modulating synaptic stability.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cell adhesion modulation; CAM; synaptic stability; cadherin; cadherin-mediated adhesion; drug delivery; cell adhesion; tumour; wound healing; neurite outgrowth.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEKI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 266; DB 5; Length 47
Pred. No. 2.1e-26;
0; Mismatches 1; Indels
                                                                                                        (UYWA-) UNIV WALES COLLEGE OF MEDICINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptide Seg ID No: 59 of W09933875.
                                                                                                                                                                                                                                                                                                                                                       Disclosure, Fig 14; 66pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAY17159 standard; peptide; 48 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              96.7%; initarity 98.0%; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         98WO-CA001207
                    04-MAY-2001; 2001WO-GB001956
                                                              04-MAY-2000; 2000GB-00010630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-00996679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-SEP-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          methods of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gour BJ;
                                                                                                                                                                                                WPI; 2002-066521/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UYMC-) UNIV MCGILL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1999-430231/36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
Matches 49; Conserv
                                                                                                                                                                                                                       N-PSDB; AAS16973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 475 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blaschuk OW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-DEC-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9933875-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         23-DEC-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             08-JUL-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Synthetic.
                                                                                                                                                      Jiang WG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAY17159;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                     Composition comprising biologically active agent and permeabilizing peptide that reversibly enhances mucosal epithelial paracellular transport by modulating epithelial junctional structure and/or physiology in mammal.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention relates to a novel composition comprising a biologically active agent and mucosal delivery-enhancing effective amount of permeabilising peptide that reversibly enhances mucosal epithelial paracellular transport by modulating epithelial junctional structure and/or physiology in a mammal. The agent of the invention inhibits homotypic binding of epithelial membrane adhesive protein chosen junctional adhesion molecule (JAM), occludin and claudin. The biologically active agent is effective for treatment of sexual dysfunction, for example male exectile sexual dysfunction or female sexual dysfunction. The present sequence is that of the human occludin protein which is related to the invention.
occludin; claudin; sexual dysfunction; male erectile sexual dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human; KV protein; KVE702; angiogenic factor antagonist; angiogenesis; vascular endothelial structure regulator; cancer; vascular endothelium; tumour; blood vessel; epithelial cell; cytostatic; gene therapy; J36.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.0%; Score 275; DB 8; Best Local Similarity 100.0%; Pred. No. 1.5e-27; Matches 51; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Encoded by GAGCCA"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; SEQ ID NO 900; 426pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAU11278 standard; protein; 475 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human recombinant J36 polypeptide.
                         female sexual dysfunction; human
                                                                                                                                                                                                  24-JUN-2003; 2003WO-US019994.
                                                                                                                                                                                                                                            28-JUN-2002; 2002US-0392512P
                                                                                                                                                                                                                                                                                        (NAST-) NASTECH PHARM CO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-091087/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Key
Misc-difference 48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 522 AA;
                                                                                                          WO2004003145-A2
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WO200183562-A2

08-NOV-2001

sapiens

Ношо

BXBXFXBXFXBXFXXXX

Synthetic

26-MAR-2002

AAU11278;

RESULT 9 AAU11278

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Gaps

; 0 20 20

Length 475;

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agent that inhibits cadherin-mediated adhesion, where the agent comprises a cyclic peptide having a peptide ring, and where the sequence His-Alaval is present within the peptide ring, and where the sequence His-Aladebseion modulating agents that inhibit cadherin-mediated adhesion. They can be used in a method for inhibiting synaptic stability in mammals. They agents can be used in a method for inhibiting synaptic stability in mammals. They agents can be used to treat diseases or other conditions characterized by undesirable cell adhesion or to facilitate drug delivery to a specific tissue or tumour. Alternatively the agents may be used to enhance cell adhesion (e.g. to supplement or replace stitches or to facilitate wound healing) or to enhance or direct neurite outgrowth
                                                                                  The invention provides cyclic peptide cell adhesion modulating (CAM) agents that comprises a His-Ala-Val recognition sequence. Also provided is a method for inhibiting synaptic stability in a mammal that comprises administering to a mammal a therapeutically effective amount of a CAM
                         Example; Page 138; 144pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 48 AA;
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Gaps ö 48 1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48 95.6%; Score 263; DB 2; Length 48; 100.0%; Pred. No. 3.5e-27; 1 GVNPTAQSSGSLYGSQIYALCNQPYTPAATGLYVDQYLYHYCVVDPQE 0; Indels 100.0%; Preu. ... Best Local Similarity 100. Matches 48; Conservative ò g

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RESULT 11

AAY96005 standard; peptide; 48 AA.

AAY96005;

(first entry) 05-DEC-2000 Human occludin extracellular domain 2.

Cell adhesion; occludin; human; tissue permeability; vasopermeability; vulnerary; wound healing; drug delivery; tumour; therapy. Cell

Homo sapiens

Location/Qualifiers Region

38. .41 /note= "cell adhesion recognition sequence"

US6110747-A.

29-AUG-2000

98US-00222373 29-DEC-1998; 97US-00001511 31-DEC-1997; (ADHE-) ADHEREX TECHNOLOGIES INC.

Blaschuk OW;

Gour BJ,

Symonds JM,

WPI; 2000-586358/55.

Use of modulating agent comprising an occludin sequence to identify compound that modulates occludin-mediated cell adhesion, involves contacting test compound with antibody and detecting antibody binding Level

Disclosure; Fig 2; 48pp; English.

The present sequence is that of the second extracellular domain of human occiudin. This domain of occludin includes a cell adhesion recognition (CAR) motif that promotes the formation of permeability barriers. The CAR motif is also found in other mammalian occludins (see AAY96006-8). Linear 

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need in the case of modulating occludin-mediated processes, such as call adhesion. The invention provides methods for using modulating agents capable of modulating occludin-mediated processes, such as call adhesion. The invention provides methods for using modulating agents to enhance or inhibit occludin-mediated cell adhesion in vivo or in vitro. The modulating agents comprise at least 1 occludin CAR sequence or an antibody that specifically binds the occludin CAR sequence. The modulating agents that inhibit cell adhesion may be used to treat conditions characterized by undesirable cell adhesion or to facilitate conditions characterizated by undesirable cell adhesion or to facilitate chance cell adhesion may be used to enhance would healing or reduce scarring. Antibodies raised against peptides containing the occludin CAR sequence are used in a claimed method for identifying a compound capable of modulating occludin mediated cell adhesion, especially when the test compound is produced by an expression library
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Modulating agents for treating autoimmune diseases, cancer, spinal cord injuries, and for increasing vasopermeability, inhibiting synaptic stability and preventing pregnancy.
  and cyclic (see AAY95998-Y96004) peptides of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HAV binding motif; antiapoptotic; cytostátic; cell adhesion; neutite outgrowth; Schwann cell migration; tumour; cancer; metastasis; apoptosis; angiogenesis; immune system; pregnancy; vasopermeability; demyelinating neurological disease.
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                                                                                                                                                                                                                                                                                                                                                                                    Length 48;
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                                                                                                                                                                                                                                                                                                                                                                                Score 263; DB 3; 1
Pred. No. 3.5e-27;
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100.0%; Pred. No. 3....
0; Mismatches
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(see AAY95990-Y95997)
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or N. Inhibition of cadherin mediated cell adhesion by (1) is used in reducing unwanted cellular adhesion, enhancing drug delivery through skin, drug delivery to a tumour, treating cancer and/or inhibiting metastasis, inducing apoptosis, inhibiting anglogenesis, modulating immune system, preventing pregnancy, increasing vasopermeability, inhibiting synaptic stability in a mammal. Enhancement is used for facilitating wound healing, enhancing adhesion of foreign tissue implant, enhancing and/or directing neurite outgrowth and treating spinal cord injuries. (I) is used for treating demyelinating neurological diseases and for facilitating blood sampling in a mammal. (I) is used for detecting cadherin expressing cells in a sample by detecting the level of antibody cadherin complex. AAY78148 to AAY78242 represent sequences used in the exemplification of the present invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              New cadherin modulating agents, used for modulating nonclassical cadherin -mediated functions for treating e.g. cancers, obesity, rheumatoid arthritis, multiple sclerosis, diabetes or a neurological disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Modulation; nonclassical cadherin mediated cell adhesion; CAR; inhibition; cadherin extracellular domain; cell adhesion recognition; OB-cadherin; cadherin-5; cadherin-6; cadherin-7; cadherin-8; cadherin-12; cadherin-14; cadherin-15; T-cadherin; PB-cadherin; cadherin; cadherin related neuronecptor; LI-cadherin; protocadherin; desmocollin; calcium binding; cancer; tumour; obesity; rheumatoid arthritis; multiple sclerosis; diabetes; metastasis;
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100.0%; Pred. No. 3.5e-27;
ive 0; Mismatches 0;
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99US-00264516.
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Best Local Similarity 100.
Matches 48; Conservative
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                                                                                                                                                                                                                                                                    Sequence 48 AA;
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06-NOV-1998;
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conclassical cadherin-mediated functions. They can be used for e.g. inhibiting adhesion of nonclassical-cadherin expressing cells in a mammal, enhancing delivery of a drug through the skin of a mammal, chancing delivery of a drug to a tumour in a mammal, treating cancer in a mammal, inhibiting metastasis of a cancer in a mammal, inhibiting can engiogenesis in a mammal, inhibiting can expressing cell, preventing or treating obesity in a mammal, stimulating blood vessel regression in a mammal, enhancing drug delivery to the cantral nervous system, treating a demyelinating neurological disease, increasing vasopermeability in a mammal, enhancing adhesion of conclassical cadherin-expressing cells, inhibiting synaptic stability in a mammal, or preventing pregnancy in a mammal. They can also be used for conclassical cadherin-expressing cells, inhibiting synaptic stability in a mammal, or preventing pregnancy in a mammal. They can also be used for treating e.g. psoriasis, arthritis, age creducing scar tissue, or enhancing adhesion of foreign tissue in a mammal. They can also be used for treating e.g. psoriasis, arthritis, acceptance can also be used for treating e.g. psoriasis, and diabetes. The products can also be used for detection and diagnosis and in bioreactors. ANY64532 to AAX64522 represent specifically claimed peptides, and AAX64532 to AAX64532 represent specifically claimed peptides, and in AAX64532 to AAX64532 represent specifically claimed peptides, and in a conception of the conception and the conception of the conception and the conception and any conception and c
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Pred. No. 3.5e-27;
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100.0%; Pred. No. ...
0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches
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intercellular adhesion, reducing unwanted cellular adhesion, enhancing delivery of a drug to a tumor, inhibiting development of cancer, inhibiting angiogenesis, enhancing drug delivery to the CNS, enhancing wound healing, modulating the immune system, increasing vasopermeability, treating demyelinating disease, facilitating migration of an N-cadherin expressing cell on astrocytes, inhibiting synaptic stability, modulating neurite outgrowth, and treating spinal cord injuries and macular degeneration. The present sequence represents a occludin cell adhesion recognition (CAR) sequence with flanking amino acids
   8$8888888888
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Sequence 48 AA;

ö Gaps ö 48 48 Length 48; 1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 0; Indels Query Match 95.6%; Score 263; DB 4; L Best Local Similarity 100.0%; Pred. No. 3.5e-27; Matches 48; Conservative 0; Mismatches 0; 유 ò

RESULT 15

ABU60314 standard; peptide; 48 ABU6031

ABU60314;

(first entry) 29-APR-2003 Mammalian occludin CAR sequence #1.

Cell adhesion; cadherin-mediated function; His-Ala-Val binding motif; HAV-BM; cell adhesion recognition; CAR; adhesion molecule; tumour; neurite outgrowth; Schwann cell migration; snaptic stability; T-cell; drug delivery; central nervous system; CNS; cancer; metastasis; apoptosis; angiogenesis; wound healing; foreign tissue; implantation; spinal cord injury; demyelinating neurological disease; immune system; multiple sclerosis; pregnancy; vasopermeability; blood sampling; diabetes; rheumatoid arthritis; skin disorder; cytostatic; vulnerary; cutaneous lymphoma; antitathritic; neuroprotective; antidiabetic; contraceptive; mammalian; occludin CAR.

Mammalia.

US6472368-B1

29-OCT-2002

99US-00351048 09-JUL-1999; 98US-00113977. 10-JUL-1998;

Gour BJ; (ADHE-) ADHEREX TECHNOLOGIES INC. Doherty P, Blaschuk OW,

WPI; 2003-265085/26.

Cell adhesion modulating agent, useful for modulating cadherin-mediated functions, e.g. cell adhesion, neurite outgrowth, Schwann cell migration and synaptic stability, consists of a cyclic peptide. Disclosure; Col 37; 63pp; English. 

The present invention relates to cell adhesion modulating agents and methods for enhancing or inhibiting cadherin-mediated functions. The cell adhesion modulating agents comprise at least a His-Ala-Val binding motif (HAV-BM), an analogue or peptidomimetic of, or an antibody or fragment that specifically binds to such a motif. The modulating agents may also comprise one or more cell adhesion recognition sequences (CAR) recognised by cadherin and/or other adhesion molecules. Preferably the modulating agents are cyclic peptides. The modulating agents of the invention are useful for enhancing or inhibiting cadherin-mediated functions (e.g. cell

stability), mentre outgraven, some mental magnature and synapure stability), mentre outgraven, some mental through the skin of a mammal or to a tumour or central nervous system (CNS) of a mammal, treating cancer and/or inhibiting metastases in a mammal, inducing apoptosis in a cadherin-expressing cell, inhibiting angiogenesis in a mammal, facilitating wound healing in a mammal, enhancing adhesion of foreign tissue implanted within a mammal, enhancing and/or directing neurite outgrowth, treating spinal cord injuries, treating demyellnating neurological diseases (e.g. multiple sclerosis), modulating the immune system, preventing pregnancy, increasing vasopermeability, controlling diseases associated with excess generation of otherwise normal T cells, treating diabetes, rheumatoid arthritis, and skin disorders (e.g. cutaneous lymphomas). The present sequence represents a mammalian adhesion, neurite outgrowth, Schwann cell migration and synaptic occludin CAR sequence \$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

Sequence 48 AA;

Gaps ; 0 95.6%; Score 263; DB 6; Length 48; 100.0%; Pred. No. 3.5e-27; ive 0; Mismatches 0; Indels 48; Conservative Local Similarity Query Match Best Loca Matches

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48

1 GVNPTAQSSGSLYGSQIYALCNQPYTPAATGLYVDQYLYHYCVVDPQE 1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE

ઠે 엄 Search completed: April .1, 2005, 10:10:10 Job time : 28.1827 secs

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5.1.6
Compugen Ltd.
 GenCore version
Copyright (c) 1993 - 2005
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Run on:		April	٦,	2005,	09:31:32	금	 22	Search time 24.7665 8	time	24.766	Secon

alignments) Million cell updates/sec (without 1054.491

US-09-891-064A-2_COPY_196_246 275 1 GVNPTAQSSGSLYGSQIYAL......LYVDQYLYHYCVVDPQEAIA 51 Title: Perfect score: Sequence:

Scoring table:

1612378 segs, 512079187 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

1612378

seq length: 0 seq length: 200000000 0B 0B Minimum Maximum

Total number of hits satisfying chosen parameters:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

UniProt_03:*
1: uniprot_sprot:*
2: uniprot_trembl:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## COTTORNATIO

	Description	Q16625 homo sapien		Q61146 mus musculu	Q6p6t5 rattus norv	Q92303 rattus norv	Q28269 canis famil	Q9n0w3 canis famil	Q9pun1 xenopus lae	Q66j48 xenopus lae	Q6nrr0 xenopus lae	Q7zue7 brachydanio	Q28793 potorous tr		Q91049 gallus gall		Q8vds1 mus musculu	Q9nee0 leishmania	Q81kk9 phytophthor				_		Q9at28 phytophthor		Q9a5h0 caulobacter	Q7pkc4 anopheles g	Q6je41 humulus jap		ralstoni	Q6ft62 candida gla
SUMMARIES	ID	OCLN HUMAN	Q6PP84	OCLN_MOUSE	Q6P6T5	Q9Z303	OCLN CANFA	Q9N0 <u>W</u> 3	OCIN_XENLA	Q66J48	Q6NRR0	Q7ZUE7	OCLN POTTR	0€NX <u>9</u> 9	OCI'N CHICK	Q91XWS	Q8VDS1	Q9NEE0	QBLKK9	Q7TP51	Q91TL1	QBLKLO	Q9AT04	Q6FL57	Q9AT28	Q8G9X5	Q9A5H0	Q7PKC4	Q6JE41	Q96TB7	Q8XWD4	Q6FT62
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	Query Match Length	522	449	521	523	523	521	260	493	519	497	492	489	200	504	81	406	1246	225	1085	1386	236	238	505	237	182	533	691	853	180	198	544
de	Query Match	100.0	96.7	92.7	91.3	91.3	88.7	88.7	74.2	74.2	6.09	0.09	59.3	58.9	52.4	27.6	24.0	24.0	23.8	23.6	23.5	23.1	23.1	22.2	22.0	21.8	21.8	21.8	21.8	21.5	21.5	21.5
	Score	275	266	255	251	251	244	244	204	204	167.5	165	163	162	144	92	99	99	65.5	65	64.5	63.5	63.5	61	60.5	9	9	9	9	59	59	59
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Q9ax18 phytophthor P00087 rhodospiril (92693 listeria in 039164 costelytra (610/8 photobacter (650/8 oryza sativ Q77464 giardia lam (999/1) cercopithec (88m97 oceanobacil (88m67 escherichia (991/8 thermotoga (81m1) drosophila (971f19 rhesus cyto
Q9AXL8 CY21_RHOMO CY21_RHOMO COAT_IRV16 COAT_IRV16 G69N36 Q69N36 Q97N4D6 Q9YU11 Q8EM97 Q8GA61 Q9XLY5 Q8ANR0 Q9XLY5
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2337 294 462 462 199 199 199 1343 1343
20000000000000000000000000000000000000
58 50 50 50 50 50 50 50 50 50 50 50 50 50
W W W W W W W A A A A A A A A A A A A A

## ALIGNMENTS

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REPUBLICE FROM N.A.

TISSUE-Brain, and Lung;

RA MEDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

RA MIDLINE-22388257; PubMed=12477932; DOI=10.1073/pnas.242603899;

RA Altenul S.F., Zeeberg B., Buerow K.H., Schaefer C.F., Bhar N.K.,

RA Altenul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

RA Altenul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,

Backerstein M.J., Goares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,

RA Stableton M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,

RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,

RACHARGS S., McWewan D.J., McKernan K.J., Malk Y.J., Hulyk S.W.,

RA Boask S.A., McWewan D.Y., McKernan K.J., Malk Y.J., Hulyk S.W.,

RIJIalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,

RA Pahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,

Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,

RA Rodriguez A.C., Grimwood J.W., Schmutz J., Myers R.M.,

Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,

RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,

RA Schnerch A., Schein J.E., Jones S.J.M., Marra M.A.,

RGeneration and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
TISSUB-COLON carcinoma;
MEDLINE=96181089; PubMed=8601611; DOI=10.1083/jcb.133.1.43;
MEDLINE=96181088; PubMed=8601611; DOI=10.1083/jcb.133.1.43;
Ando-Akateuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,
Itoh M., Yonemura S., Furuse M., Tsukita S.;
"Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat-kangaroo homologues.";
                                                                                                                                                                      Homo sapiens (Human).
Bukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi, Mammalia, Butheria, Primates, Catarrhini, Hominidae, Homo.
NCBI_TaxID=9606,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Fukasawa M., Toyota T., Yoshitsugu K., Yoshikawa T.; "Genomic structure of occludin gene."; Submitted (JUL-2001) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         van Itallie C.M., Fanning A.S., Anderson J.M.;
Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
                                                              Created)
Last sequence update)
Last annotation update)
                       522 AA
                       PRT;
                       STANDARD;
                                                              15-DEC-1998 (Rel. 37, 15-DEC-1998 (Rel. 37, 25-OCT-2004 (Rel. 45,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 [2]
SEQUENCE FROM N.A.
                                         Q16625; Q8N6K1;
15-DEC-1998 (Re
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE=Liver;
                       HUMAN
                                                                                                                                                     Name=OCLN;
                                                                                                                             Occludin
HUMAN
  OCLIN
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Eukaryota, Merezoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                     Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovidae,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       123 GVNPTAQASGSLYSSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                              Sundstrom J.M., Felinski E.A., Phillips B., Antonetti D.A., Sundstrom J.M., Felinski E.A., Phillips B., Antonetti D.A., Submitted (APR-2004) to the EMBL/GenBank/DDBJ databases. EMBL, AYS89500; AAT00455.1; -. GO, GO:0016021; C:integral to membrane; IEA. GO, GO:0005923; C:tight junction; IEA. GO, GO:0005198; F:structural molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96.7%; Score 266; DB 2; Length 449; 96.1%; Pred. No. 5.6e-26; ive 1; Mismatches 1; Indel8
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
1 1 1 SEQÜENCE 449 AA; 50627 MW; 235BB8259CF05DIC CRC64;
                                                          Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q61146;
15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
     449 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   521 AA
                                         Created)
   PRT;
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                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
               OGPP84;
05-JUL-2004 (TrEMBLrel. 27, C
05-JUL-2004 (TrEMBLrel. 27, I
^-_IIIL-2004 (TrEMBLrel. 27,
                                                                                                                                                                                                                                                                     TISSUE=Retinal endothelium;
                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR008253; Marvel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sest Local Similarity 96.1
Matches 49; Conservative
   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Name=Ocln; Synonyms=Ocl;
                                                        05-JUL-2004 (TrEMBLre
05-JUL-2004 (TrEMBLre
Occludin (Fragment).
                                                                                                                                     Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (Mouse)
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                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
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                                                                                                                                                                                                        NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                            Bovinae: Bos
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OCLN_MOUSE
                                                                                                                   Name=OCLN;
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OCLN MOUSE
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                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
and mouse cDNA sequences.";
Proc. (Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

-!- FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier.

-!- SUBUNIT: Interacts with TJP1/ZO1 and with VAPA.

-!- SUBCELLUAR LOCATION: Integral membrane protein.

-!- TISSUE SPECIFICITY: Localized at tight junctions of both epithelial and endothelial cells. Highly expressed in kidney. Not
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                   detected in testis.

-!- DOMAIN: The C-terminal is cytoplasmic and is important for interaction with ZO-1. Sufficient for the tight junction localization. Involved in the regulation of the permeability barriar function of the tight junction (By similarity).
-!- PTM: Phosphorylated (By similarity).
-!- SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GO; GO:0006461; P:protein complex assembly; TAS.
InterPro; IPR008253; Marvel.
InterPro; IPR002954; Occludin.
InterPro; IPR012944; Occludin. ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
Coiled coil; Phosphorylation; Tight junction; Transmembrane.
DOWALIN (POCENTIAL) (Cytoplasmic (Potential)).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Potential.
Extracellular (Potential).
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -> S (in Ref. 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Cytoplasmic (Potential). Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cytoplasmic (Potential). Gly/Tyr-rich. Coiled coil (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                      or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GO; GO:0005886; C:plasma membrane; TAS
GO; GO:0006461; P:protein complex asser
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AF400630; AAL47094.1; -. AF400623; AAL47094.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF400627; AAL47094.1; JOINED AF400628; AAL47094.1; JOINED AF400629; AAL47094.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                59143 MW;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAH29886.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 51; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   U53823; AAB00195.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PIR; G02533; G02533.
Genew; HGNC:8104; OCLN.
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160
170
195
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522 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC029886;
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TRANSMEM
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TRANSMEM
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EMBL;
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EMBL;
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EMBL; EMBL;

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Gaps

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STRAIN=CS7BL/6J; TISSUE=Ovary, and Uterus;
MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;
MEDLINE=22354683; PubMed=12466851; DOI=10.1038/nature01266;
Mikaido I., Osato N., Kasukawa T., Adachi J., Bono H., Kondo S.,
Nikaido I., Osato N., Saito R., Suzuki H., Yamanaka I., Kiyosawa H.,
Yagi K., Tomaru Y., Hasegawa Y., Nogami A., Schonbach C., Gojobori T.,
Baldarelli R., Hill D.P., Bult C., Hume D.A., Quackenbush J.,
Schriml L.M., Kanapin A., Matsuda H., Batalov S., Beisel K.W.,
Blake J.A., Bradt D., Brusic V., Chothia C., Corbani L.E., Cousins S.,
Dalla B., Dragani T.A., Fletcher C.F., Forrest A., Frazer K.S.,
Gaasterland T., Gariboldi M., Gissi C., Godzik A., Gough J., TISSUE-Lung;

TISSUE-Lung;

BEDLINE-SG18108B; PubMed=8601611; DOI=10.1083/jcb.133.1.43;

Ando-Akateuka Y., Saitou M., Hirase T., Kishi M., Sakakibara A.,

Itoh M., Yonemura S., Furuse M., Tsukita S.;

Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rae-kangaroo homologues.";

J. Cell Biol. 133:43-47(1996).

RESULT 2 Q6PP84

셤 ò

521 AA; 59000 MW; 21D62F370EB33B7D CRC64;

SEQUENCE

S

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Kanai A., Kawaji H., Kawasawa N., Garkbon I.U., Jaryis B.D.,
Kanai A., Kawaji H., Kawasawa Y., Kedrenti R.H., King B.L.,
Maglott D.R., Maltais L., Marchionni L., McKenize L., Miki H.,
Magashima T., Numata K., Okido T., Paran W.J., Pertea G., Pesole G.,
Nagashima T., Numata K., Okido T., Paran W.J., Pertea G., Pesole G.,
Petrovsky N., Pilai R., Pontius J.U., Qi D., Ramachandran S.,
Ravasi T., Reed J.C., Reed D.J., Reid J., Ring B.Z., Ringwald M.,
Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D. Tomita M.,
Sultana R., Takenaka Y., Taylor M.S., Teasdale R.D., Tomita M.,
Verardo R., Wanner L., Wahlestedt C., Wang Y., Watanabe Y., Weils C.,
Wilming L.G., Wynshaw-Boris A., Yanagisawa M., Yang I., Yang I.,
Yuan Z., Zavolan M., Zhu Y., Zimmer A., Carninci P., Hayatsu N.,
Hirozane-Kishikawa T., Konno H., Nakamura M., Sakazue N., Sato,
M., Hara A., Hashizume W., Imotani K., Ishii Y., Itoh M., Kagawa I.,
Miyazaki A., Sakai K., Sasasi D., Shibata K., Shinagawa A.,
Yasunishi A., Yoshino M., Watereton R., Lander B.S., Rogers J.,
Malysis of the mouse transcriptome based on functional annotation of
M. Mathar A., Malysis of the mouse transcriptome based on functional annotation of
M. Mathar A., Sakai K., Saranscriptome based on functional annotation of
M. Mathar A., Sakai K., Saranscriptome based on functional annotation of
M. Mathar A., Malanscriptome based on functional annotation of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEVELOPMENTAL STAGE: Found diffusely on the lateral membranes of Sertoli cells in the early prepubertal period. With development, became gradually concentrated at the most basal regions of Sertoli
                                                                                                                                                                                                                                                                                                                                                                                                                                      FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier.

19th junction (TJ) paracellular permeability barrier.

1 SUBCELIULAR LOCATION: Integral membrane protein.

1 TISSUE SPECIFICITY: Localized at tight junctions of both epithelial and endothelial cells. Highly expressed in the testis, kidney, lung, liver and brain. Not detected in skeletal muscle, property.
Grimmond S., Gustincich S., Hirokawa N., Jackson I.J., Jarvis B.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOWAIN: The C-terminal is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity). FTM: Phosphorylated (By similarity). SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Colled coil; Phosphorylation; Tight junction; Transmembrane.

DOMAIN 1 66 Cytoplasmic (Potential).

TRANSMEM 67 89 Potential.
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Coiled coil (Potential).
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GO; GO:0005512; C:tight junction; IDA.
GO; GO:0005515; P:protein binding; IPI.
InterPro; IPR002553; Marvel.
InterPro; IPR002559; Occludin.
InterPro; IPR010844; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; MARVEL; 1.
Pfam; PF01284; MARVEL; 1.
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1158
1168
1193
241
263
263
129
129
488
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TRANSMEM
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MEDLINE-228825; PubMed=12477932; DOI=10.1073/pnas.242603899; MEDLINE-228825; PubMed=12477932; DOI=10.1073/pnas.242603899; Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G., Schuler G.D., Altschul S.P., Zeeberg B., Buetcw K.H., Schaefer C.F., Bhat N.K., Altschul S.P., Zeeberg B., Buetcw K.H., Schaefer C.F., Bhat N.K., Diatchenko L., Marusha K., Paramer A.A., Rubin G.M., Haieh F., Stapleton M., Sarese M.B., Ponaldo M.F., Casavant T.L., Scheetz T.E., Stapleton M., Sarese M.B., Toshiyuki S., Carninci P., Prange C., Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J., Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunzatne P.H., Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W., Villalon D.K., Muzny D.M., Sodergen B.J., Lu X., Gibbs R.A., Rhey J., Helton B., Ketteman M., Madan A., Rodrigues S., Sanchez A., Markealey R.W., Touchman J.W., Garen B.D., Dickson M.C., Abales B.A., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Schnerch A., Schein J.E., Todenzrain M.A., Malan J., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Schein J.E., Schnerch A., Schein J.E., Marra M.A., Touchman J.W., Garen B.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Smailus D.E., Schnerch A., Schein J.E., Reference D.M., Marra M.A., Touchman J.W., Green B.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Green B.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Green B.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Green E.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Green B.D., Dickson M.C., Abalose S.J., Marra M.A., Touchman J.W., Green E.D., Marra M.A., Schein J.E., Schnerch A., Schein J.E., Touchman D.W., Green E.D., Marra M.A., Touchman J.W., Green E.D., Marra M.A., Schein J.E., Schnerch A., Schein J.E., Marra M.A., Malan M.A., Schein J.E., Marra M.A., M.A., Malan M.B., Schein J.E., Marra M.A., M.A., Malan M.B., Schein J.E., Marra M.A., M.S.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                    194 GVNPTAQASGSMYGSQIYMICNQPYTPGGTGLYVDQYLYYYCVVDPQEAIA 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5
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                                                                                           1 GVNPTAQSSGSLYGSQIXALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA
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Strausberg R.;
Strausberg R.;
Strausberg R.;
Strausberg R.;
Submitted (INOV-2003) to the EMBL/GenBank/DDBJ databases.
R GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005923; C:tight junction; IEA.
R GO; GO:0005198; F:structural molecule activity; IEA.
InterPro; IPR008253; Marvel.
R InterPro; IPR00844; Occludin.
R InterPro; IPR00844; Occludin.
  Length 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 523;
                                              3; Indels
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86.3%; Pred. No. 5.9e-24;
ive 4; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             523 AA; 59186 MW; A31E007B58AEA5B5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
                                                                                                                                                                                                                                                                                                                                   Last sequence update)
Last annotation update)
Score 255; DB 1;
Pred. No. 1.8e-24;
                                                                                                                                                                                                                                                                523 AA
                                            3; Mismatches
                                                                                                                                                                                                                                                                                                             Created)
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Pfam; PF07303; Occludin ELL; 1.
92.7%;
88.2%;
                                                                                                                                                                                                                                                                                                        (TrEMBLrel. 27, TrEMBLrel. 27, TrEMBLrel. 27,
                   Local Similarity 88.2
les 45; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    and mouse cDNA sequences.
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SEQUENCE 523 AA; 59186
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                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
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ses 44; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SECUENCE FROM N.A.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                          05-JUL-2004
                                                                                                                                                                                                                                                                                                                                 05-JUL-2004
05-JUL-2004
                                                                                                                                                                                                                                                                                                                                                                                                      Name=Ocln;
  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
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                                              Matches
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-!- TISSUE SPECIFICITY: Localized at tight junctions of both

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                                                                                                                                                                                                   Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. Cell Biol. 137:1393-1401(1997).
--- FUNCTION: May play a role in the formation and regulation of the tight junction (TJ) paracellular permeability barrier. Interacts with ZO-1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Name=OCLN;
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Kidney;

MEDLINE=S6181088; PubMed=8601611; DOI=10.1083/jcb.133.1.43;
Ando-Akateuka Y., Saltou M., Hirase T., Kishi M., Sakakibara A., Itoh M., Yonemura S., Furuse M., Tsukita S.; Interspecies diversity of the occludin sequence: cDNA cloning of human, mouse, dog, and rat.kangaroo homologues.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          196 GVNPTAQASGSMYGSQIYTICSQFYTPGGTGLYVDQYLYHYCVVDPQEAIA 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 523;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            y Match 91.3%; Score 251; DB 2; Length 52:
Local Similarity 86.3%; Pred. No. 5.9e-24;
nes 44; Conservative 4; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN=SD; TISSUB=Liver;
Kokal Y., Kuwahara K., Atsumi S., Mori M.;
Submitted (UUL-1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AB016425; BAA36681.1; --
EMBL; AB016425; C:integral to membrane; IEA.
GO; GO:0005233; C:integral to membrane; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               523 AA; 59214 MW; 5E1E007568AEA5B1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- SUBUNIT: Interacts with VAPA (By similarity).
-!- SUBCELLULAR LOCATION: Integral membrane protein.
                                                                                                                                               Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
                                                                        523 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521 AA
                                                                                                                        Created)
                                                                      PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                01-MAY-1999 (TrEMBLrel. 10, 01-MAY-1999 (TrEMBLrel. 10, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CANFA
                                                                                                                                                                                              Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OCLN CAN
Q28269;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 6
OCLN CANFA
                                                                      Q9Z303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                      RESULT 5
                                               Q9Z303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SO DE REPRENTATION OF THE PROPERTY OF THE PROP
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This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib.ch).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
epithelial and endothelial cells.

DOMAIN: The C-terminal is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity).

PTM: Phosphorylated. Less-phosphorylated forms are found in basolateral membrane, cytosol and tight junction. More-heavily phosphorylated forms are concentrated exclusively in tight
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Muresan Z., Paul D.L., Goodenough D.A.,
"Occludin 1B, a variant of the tight junction protein occludin.",
Mol. Biol. Cell 11:627-634 (2000).
EMBL, AF246976, PAF6217-11.
GO, GO:0016021; C:integral to membrane, IEA.
GO; GO:0005923; C:tight junction; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Occludin 1B.
Canis familiaris (Dog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Pissipedia, Canidae, Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            195 GVNPTAQASGSLYSSQIYAMCNQFYASTATGLYMDQYLYHYCVVDPQEAIA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Coiled coil; Phosphorylation; Tight junction; Transmembrane. DOMAIN 1 66 Cytoplasmic (Potential).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        88.7%; Score 244; DB 1; Length 521;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 4.7e-23;
3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Cytoplasmic (Potential).
Potential.
Extracellular (Potential)
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2875E59F8F0A1FFA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cytoplasmic (Potential). Gly/Tyr-rich. Poly-Pro.
                                                                                                                                                                                                            SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Coiled coil (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Created)
Last sequence update)
Last annotation update)
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Potential
                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL, U49221; AAC48582.1; -.
InterPro; IFR008253; Marvel.
InterPro; IFR008253; Occludin.
InterPro; IPR010844; Occludin.
Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin. ELL; 1.
PRINTS; PR01258; Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=20143583; PubMed=10679019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             59275 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-OCT-2000 (TrEMBLrel. 15, 01-OCT-2000 (TrEMBLrel. 15, 01-MAR-2004 (TrEMBLrel. 26,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      44; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                521 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TRANSMEM
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entities requires a license agreement (See http://www.isb-sib.ch/announce/
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MGC81923 protein.
Name=MGC81923;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            I_TaxID=8355;
                                              IntAct; Q9PUN1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE=Kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            initiative.
                                                                                                                                                                                                                                                               MOD_RES
MOD_RES
SEQUENCE
                                                                                                                                                                                        DOMAIN
TRANSMEM
                                                                                                                                                                                                               DOMAIN
TRANSMEM
                                                                                                                                                                              TRANSMEM
                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                              Q66J48
Q66J48;
                                                                                                                                                                 DOMAIN
                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 9
                                                                                                                                                                                                                                                                                                                                                                                                                                  Q66J48
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions and a its content is in no way modified and this statement is not removed. Usage by and for commercial
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            granules in the peripheral cytoplasm in the fertilized egg, it localizes first to the basolateral membrane, then to tight junctions after cingulin and ZO-1. Nascent tight junctions are in place by the two-cell stage. The maternal form is more highly phosphorylated than the form detected in later developmental
                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Ovary;
MEDILINE=99421641, PubMed=10491082;
MEDILINE=99421641, PubMed=10491082;
Cordenonei M., Turco F., D'Atri F., Hammar B., Martinucci G.,
Meggio F., Citi S.;
"Xenopus laevis occludin. Identification of in vitro phosphorylation
sites by protein kinase CT2 and association with cingulin.";
Eur. J. Blochem. 264:374-384 (1999).
                                                                                                                                                                                                                                                                                                                       Xenopus laevis (African clawed frog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Amphibia, Batrachia, Anura, Mesobatrachia, Pipoidea, Pipidae,
                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A., AND PHOSPHORYLATION SITES THR-375 AND SER-379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOWAIN: The C-terminus is cytoplasmic and is important for interaction with ZO-1. Necessary for the tight junction localization. Involved in the regulation of the permeability barrier function of the tight junction (By similarity). PTM: Phosphorylated.
                                                                                                                                                                 234 GVNPTAQASGSLYSSQIYAMCNQFYASTATGLYMDQYLYHYCVVDPQEAIA 284
                                                                                                                                                    1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                ö
                                                                                                        Length 560;
                                                                                                                             4; Indels
                                                                               560 AA; 63450 MW; D80B178D80AAB12D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -i- SIMILARITY: Belongs to the ELL / occludin family.
GO:0005198; F:structural molecule activity; IEA.
                                                                                                      ch 88.7%; Score 244; DB 2; 1 Similarity 86.3%; Pred. No. 5.1e-23; 44; Conservative 3; Mismatches 4;
                                                                                                                                                                                                                                                              (Rel. 41, Created)
(Rel. 41, Last sequence update)
(Rel. 44, Last annotation update)
                                                                                                                                                                                                                                          Ş
         InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=98034414; PubMed=9365283;
                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                                                                                                                                                                                                               Xenopodinae; Xenopus.
                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=8355;
                                                                                                                                                                                                                                                              28-FEB-2003 (
28-FEB-2003 (
05-JUL-2004 (
                                                                                                                                                                                                                                      OCLN XENLA
                                                                                                                                                                                                                                                                                                               Name=OCLN;
                                                                                                                                                                                                                                                                                                   Occludin.
                                                                              SEQUENCE
                                                                                                                                                                                                                                                  Q9PUN1;
                                                                                                                                                                                                                            OCLN XENLA
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pubbed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Collina F.S., Wagner L. Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsleh F.,
Diatchenko L., Maruslina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz F.B.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Frange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Phosphothreonine (by CK2) (in vitro).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Xenopus laevis (African clawed frog).

Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
Xenopodinae; Xenopus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Kidney;

BEDLINE-22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;

Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,

Richardson P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Genetic and genomic tools for Xenopus research: The NIH Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (in vitro)
                                                                                                                                                                                                                                                                                                               Colled coil; Phosphorylation; Tight junction; Transmembrane.

DOMAIN 1 47 Cytoplasmic (Potential).

TRANSMEM 48 70 Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74.2%; Score 204; DB 1; Length 493;
68.6%; Pred. No. 7.2e-18;
ive 10; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Cytoplasmic (Potential).
Potential.
Extracellular (Potential)
Potential.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9694CD302BEBBEDE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                     Extracellular (Potential)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Cytoplasmic (Potential). Coiled coil (Potential).
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25-OCT-2004 (TrEMBLrel. 28, Last sequence update)
25-OCT-2004 (TrEMBLrel. 28, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Phosphoserine (by
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          Potential.
or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT;
                                                                                                                                                                                    InterPro; IPR010844; Occludin ELL. Effan; PF01284; MRVEL; 1. Pfan; PF07303; Occludin ELL; 1. PRINTS; PR01258; OCCLUDIN.
                                                                                                                       InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           55111 MW;
                                                             EMBL; AF170275; AAD53725.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Dev. Dyn. 225:384-391(2002)
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Matches 35; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        493 AA;
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Trausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,
Klausner R.D., Colling F.S., Wagner L., Shemmen C.M., Schuler G.D.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Bordchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Tooshiyuki S., Carninci P., Prange C.,
Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Broak S.A., McKenan K.J., Malek J.A., Gunzante P.H.,
A. Richards S., Worley K.C., Hale S., Garren B.J., Lu X., Gibbs R.A.,
A. Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
A. Halton E., Ketteman M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
M. Mitting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,
Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,
Jones S.J., Marra M.J.,
Jones G.D., Marra M.J.,
Jones G.D.
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Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A., Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G., Blakesley R.W., Touchman J.W., Green B.D., Dickson M.C., Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S., Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E., Jones S.J., Marra M.A., "Generation and initial analysis of more than 15,000 full-length human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Xenopus laevis (African clawed frog).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Amphibia; Batrachia; Anura; Mesobatrachia; Pipoidea; Pipidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              204 GVNPVAQASGSAFYTQIVSICNQFYSPVQTGVFVNQYLYHYCVVEPQEAIA 254
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GVNPTAQSSGSLYGSQIYALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
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                                                                                                                                                                                                                                                                                                             Klein S., Gerhard D.S.;
Submitted (AUG-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; BC081061; AAH81061.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           519 AA; 57764 MW; 0B21C652C9D87388 CRC64;
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Last annotation update)
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                                                                                                                                                                                   and mouse cDNA sequences.";
Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74.2%; Score 204; DB 2; 68.6%; Pred. No. 7.6e-18; ive 10; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    497 AA
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InterPro; IPR010844; Occludin_ELL
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Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR008938; ARM.
InterPro; IPR008253; Marvel.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity 68.6 tes 35; Conservative
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Name=MGC82312;
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SEQUENCE FROM N.A
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QGNRRO
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MEDINES 238825; Pubmed=12477932; DOI=10.1073/pnas.242603899;
MEDINES 238825; Pubmed=12477932; DOI=10.1073/pnas.242603899;
Strausberg R.L., Felingold E.A., Grouse L.H., Derge J.G.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jendan H., Moore T., Max S.I., Wang J., Hsieh F.,
Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,
A platchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,
Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,
A Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,
Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunzatne P.H.,
Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Hilalon D.K., Muzny D.M., Sodergen B.J., Lu X., Gibbs R.A.,
A Hilalon D.K., Muzny D.M., Sodergen B.J., Lu X., Gibbs R.A.,
A Hilalon B., Ketteman M., Madan A., Rodrigues S., Sanchez A.,
A Hilalon M., Touchman J.W., Green E.D., Dickson M.C.,
A Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
A Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
A Generation and initial analysis of more than 15,000 full-length human
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Bukaryota: Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Actinopterygii; Neopterygii; Teleostei; Ostariophysi; Cypriniformes;
Cyprinidae; Danio.
TISSUE=Kidney;
MEDLINE=22341132; PubMed=12454917; DOI=10.1002/dvdy.10174;
Klein S.L., Strausberg R.L., Wagner L., Pontius J., Clifton S.W.,
Richardson P.;
                                                                              Genetic and genomic tools for Xenopus research: The NIH Xenopus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    186 GVNPQSQMGGSYYNSQMMMMCNQIYSPSGVD-FTNQYLYHYCTVDPQBAIA 235
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 2; Length 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                    Klein S., Strausberg R.;
Submitted (MAY-2004) to the EMBL/GenBank/DDBJ databases.
EMBL; BC070670; AAH70670.1; ..
GO; GO:0016021; Cintegral to membrane; IEA.
GO; GO:0005923; C:tight junction; IEA.
GO; GO:0005198; F:structural molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    497 AA; 56202 MW; 269431E14ECD0EA1 CRC64;
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Last annotation update)
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Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
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58.8%; Pred. No. 4.1e-13;
ive 7; Mismatches 13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        492 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Created)
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InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin ELL.
                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
                                                                                                                      Dev. Dyn. 225:384-391(2002).
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Similarity 58.8
nes 30; Conservative
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similar to occludin.
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SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                   PR01258;
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NCBI_TaxID=7955;
                                                                                                                                                                                      TISSUE=Kidney;
                                                                                                       initiative.",
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Matches
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Pfam; PF07303; Occludin_ELL; 1.
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A Itoh M., Yonemura S., Furuse M., Tsukita S.;
Tinterspecies diversity of the occludin sequence: CDNA cloning of
human, mouse, dog, and rat-kangaroo homologues.";
J. Cell Biol. 133:43-47(1996).

-!- FUNCTION: May play a role in the formation and regulation of the
right junction (TJ) paracellular permeability barrier.

-!- FUNCTION: May play a role in the formation and regulation of the
right junction (TJ) paracellular permeability barrier.

-!- SUBCELLULAR LOCATION: Integral membrane protein.

-!- SUBCELLULAR LOCATION: Integral membrane protein.

-!- TISSUB SPECIFICITY: Localized at tight junctions of both
epithelial and endothelial cells.

-!- DOMAIN: The C-terminal is cytoplasmic and is important for
interaction with ZO-1. Necessary for the tight junction
localization. Involved in the regulation of the permeability
barrier function of the tight junction (By similarity).

-!- PTM: Phosphorylated (By similarity).
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Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Buteleostomi,
Mammalia, Metatheria, Diprotodontia, Potoroidae, Potorous.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      187 VYPMAQTSGSVQFNQVYSMCAAYQNPQMSGAFVNQYLYHYCVVDPQBAIA 236
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                                                                                     EMBL, BC049304, AAH49304.1; ...
EMBL, BC049304, AAH49304.1; ...
ZFIN; ZDB-GENE-040426-2685; zgc:56359.
GG) GO:0005021; Cithtegral to membrane; IEA.
GG) GO:0005198; F:structural molecule activity; IEA.
AIREPPO: IPRO10824; Occludin.
InterPro: IPRO10844; Occludin.
Effam; PF07303; Occludin. ELL.
Pfam; PF07304; Occludin. ELL.
Pf07305; Occludin. ELL.
Pf07306; Occludin. ELL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11; Indels
TISSUE=Whole body;
Strausberg R.;
Submitted (MAR-2003) to the EMBL/GenBank/DDBJ databases.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60.0%; Score 165; DB 2;
58.0%; Pred. No. 8.6e-13;
iive 10; Mismatches 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
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Interpro; IPR002958; Occludin.
Interpro; IPR010844; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
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Best Local Similarity
Matches 29; Conserv
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MEDLINE=2388257; PubMed=1247932; DOI=10.1073/pnas.242603899;
XR MEDLINE=2388257; PubMed=1247932; DOI=10.1073/pnas.242603899;
Xrausberg R.D., Teingold E.A., Grouse L.H., Derge J.G.,
XR Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,
Altschul S.F., Jordan H., Moore T., Max S.I., Wang J., Heiseh F.,
A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
A Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,
A Stapleton M., Soares M.B., Toshiyuki S., Carninci P., Prange C.,
A Raha S.S., Loquellano N.A., Peters G.J., Abrameon R.D., Mullahy S.J.,
A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,
A Nilalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,
A Hilanon D.K., Muzny D.M., Sodergren E.D., Dickson M.S.,
A Hakeeley R.W., Touchman J.W., Green E.D., Dickson M.C.,
A Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M., Butterfield Y.S.,
A Krzywinski M.I., Skalska U., Smailus D.E., Schnerch A., Schein J.E.,
A Generation and initial analysis of more than 15,000 full-length human
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05-UUL-2004 (TrEMBLrel. 27, Last sequence update)
05-UUL-2004 (TrEMBLrel. 27, Last sequence update)
05-UUL-2004 (TrEMBLrel. 27, Last annotation update)
Hypothetical protein (Fragment).
Brachydanio rerio (Zebrafish) (Danio rerio).
Brachydanio serio (Zebrafish) (Caniata, Vertebrata, Buteleostomi, Actinopterygii, Neopterygii, Teleostei, Ostariophysi, Cypriniformes, Cyprinidae, Danio.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4;
Pram; Fronson, ----
PRINTS; PR01258; OCCLUDIN.
Coiled coil; Phosphorylation; Tight junction; Transmembrane.
                                                                                                                                                                                                                                                                                                                                                                                                                           Score 163; DB 1; Length 489;
Pred. No. 1.6e-12;
8; Mismatches 9; Indels
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Submitted (MAR-2004) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                  Cytoplasmic (Potential).
Potential.
Extracellular (Potential).
Potential.
                                                                                                 Potential.
Extracellular (Potential).
Potential.
                                                                                                                                                                                                                                                                                  Cytoplasmic (Potential).
Gly/Tyr-rich.
Coiled coil (Potential).
4F0CA45A41094860 CRC64;
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GO; GO:0016021; C:integral to membrane; IEA.
GO; GO:0005923; C:tight junction; IEA.
GO; GO:000598; F:structural molecule activity; IEA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).
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InterPro; IPR002958; Occludin.
                                                                                                                                                                                                                                                                                                                                                                             54075 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                              59.3%;
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Best Local Similarity
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SEQUENCE FROM N.A.
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Search completed: April 1, 2005, 10:15:03 Job time: 25.7665 secs
  Coiled coil;
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01-DEC-2001
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                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                      Gaps
                                                                                                                                    195 VYPMAQTSGSVQFNQVYSMCAAYQNPQMSGGFVNQYLYHYCVVDPQEAIA 244
                                                                                                      ;
                                                                                                                        2 VNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
TISSUE=Embryonic brain;
MEDLINE=94103332; PubMed=8276896; DOI=10.1083/jcb.123.6.1777;
MEDLINE=94103332; PubMed=8276896; DOI=10.1083/jcb.123.6.1777;
                                                                                  Length 500;
                                                                              cch 58.9%; Score 162; DB 2; Length 50 al Similarity 58.0%; Pred. No. 2.1e-12; 29; Conservative 10; Mismatches 11; Indels
                                                             500 AA; 56126 MW; 592FFF0491A17B23 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PIM: Phosphorylated (By similarity). SIMILARITY: Belongs to the ELL / occludin family.
                                                                                                                                                                                                                   15-DEC-1998 (Rel. 37, Created)
15-DEC-1998 (Rel. 37, Last sequence update)
25-OCT-2004 (Rel. 45, Last annotation update)
                                                                                                                                                                                                 504 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR008253; Marvel.
InterPro; IPR002958; Occludin.
InterPro; IPR010844; Occludin_ELL.
Pfam; PF01284; MARVEL; 1.
Pfam; PF07303; Occludin ELL; 1.
PRINTS; PR01258; OCCLUDIN.
InterPro, IPR010844, Occludin_ELL.
Bram, PR01284, MRVBE, 1.
Pfam, PP07303, Occludin ELL; 1.
PRINTS, PR01258, OCCLUDIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; D21837; BAA04865.1; -. PIR; A49467; A49467.
                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                      Gallus gallus (Chicken).
                                         Hypothetical protein.
NON TER 1
SEQUENCE 500 AA; 5
                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                              NCBI_TaxID=9031;
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Q91049;
15-DEC-1998
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NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                      Gaps
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                                                                                                                                                                                                                                                                                                                                                        1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
                                                                                                                                                                                                                                                                                                      4;
Tight junction; Transmembrane. Cytoplasmic (Potential).
                                                                                                                                                                                                                                                                   52.4%; Score 144; DB 1; Length 504; 52.9%; Pred. No. 4.8e-10;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
TISSUET-Testis;
Freemum E.A., LaVoie H.A., Millette C.F.;
Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.
                                             Extracellular (Potential)
Potential.
Cytoplasmic (Potential).
Potential.
                                                                                                             Extracellular (Potential) Potential.
                                                                                                                                                                                                                171 Coiled Coil (Potential).
55863 MW; AD0352A45A0231FF CRC64;
                                                                                                                                            Cytoplasmic (Potential) Gly/Tyr-rich.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81 AA; 8776 MW; 4562F0170C9EF0CC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-DEC-2001 (TrEMBLrel. 19, Created)
01-DEC-2001 (TrEMBLrel. 19, Last sequence update)
01-OCT-2003 (TrEMBLrel. 25, Last annotation update)
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Pred. No. 0.05;
2; Mismatches
                                                                                                                                                                                                                                                                                                  7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                        81 AA
                                                                                                                                                                                   Poly-Glu.
Poly-Arg.
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Phosphorylation;
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87.5%;
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nes 14; Conservative
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Rattus norvegicus (
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DESCRIPTION:
FRAGMENT TYPE:
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(cgn2_6/ptodata/1/iaa/5A_COMB.pep:*
(cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
(cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
(cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
(cgn2_6/ptodata/1/iaa/PcTuS_COMB.pep:*
(cgn2_6/ptodata/1/iaa/PcTuS_COMB.pep:*
                     5.1.6
Compugen Ltd
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US-08-945-826-4

US-08-945-826-6

US-09-197-503-6

US-09-197-503-6

US-09-197-503-6

US-09-222-373-5

US-09-222-373-5

US-09-2113-977-6-5

US-09-113-977-6-5

US-09-113-973-62

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S-10-193-653-69
S-08-939-853A-15
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                                                                                                                                                                                                                                                                                                                                                                                                                                                          513545 segs, 74649064 residues
                     GenCore version
Copyright (c) 1993 - 2005
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                         OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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seq length: 200000000
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Maximum DB
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                                                                                                                                                                                                                                                                                                                                Sequence:
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No.
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Sequence 2, Application US/09142732

Sequence 2, Application US/09142732

Patent No. 6252045

GENERAL INFORMATION:

APPLICANT: James M. Anderson

APPLICANT: Christina M. Van Itallie

TITLE OF INVENTION: Human Occludin, Its Uses and

TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors

TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors

TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors

TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors

TORRESPONDENCES:

CORRESPONDENCES:

ADDRESSEE: Section of Digestive Diseases

ADDRESSEE: Department of Internal Medicine

STREET: 333 Cedar Street, LCI 105

CITY: New Haven

STREET: Connecticut

COUNTRY: United States of America

ZIP: O6520-8057

COMPUTER READALE FORM:

MEDIUM TYPE: 3.5" 1.44 Mb diskette

COMPUTER: IBM PC

COMPUT
                                                                                             8174, Appli
7, Appli
6737, Appli
46, Appl
46, Appl
2, Appli
8, Appli
                                                                                          Sequence 8174
Sequence 7, A
Sequence 7, A
Sequence 46
Sequence 46
Sequence 46
Sequence 2, A
Sequence 2, A
Sequence 8, A
Sequence 8, A
Sequence 8, A
                                     Sequence
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US-09-001-511-7

US-09-510-616-7

US-09-450-073-7

US-09-026-343-7

US-09-036-817-7

US-09-949-016-6737

US-09-949-016-6737

US-09-222-373-46

US-09-011-511-46

US-09-510-616-46

US-09-450-073-46

US-09-450-073-48

US-09-222-373-8

US-09-222-373-8

US-09-222-373-8

US-09-222-373-8

US-09-210-616-8

US-09-210-616-8

US-09-210-618-8

US-09-210-618-8
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PRIOR APPLICATION DATA:
PRIOR APPLICATION DATA:
FYDIATION NUMBER: PCT/US97/05809
FILING DATE: March 14, 1997
APPLICATION NUMBER: U.S. 60/013,625
FILING DATE: March 15, 1996
ATTORNEY, AGENT INFORMATION:
NAME: MARY M. KFINEKY
REGISTRATION NUMBER: 32423
REFERENCE/DOCKET NUMBER: 1751-P0016B.F
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
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CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/142,732
FILING DATE:
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INFORMATION FOR SEQ ID NO:
SEQUENCE CHARACTERISTICS:
      single
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TOPOLOGY: linear
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TELEPHONE:
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                                          Query Match 100.0%; Score 2590; DB 3; Length 522; Best Local Similarity 100.0%; Pred. No. 1e-221; Matches 490; Conservative 0; Mismatches 0; Indels 0
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Patent No. 6489460

GENERAL INFORMATION: Shoichiro

TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN

VINDBER PROPERSE: Birch, Stewart, Kolasch & Birch, LLP

STREET: P.O. Box 747

CITY: Falls Church

STATE: VA

COMPUTER: PLOBORY

COMPUTER READABLE FORM:

MEDIUM TYPE: PLODS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/945,826

FILING DATE: US-105-107

CLASSTERICATION F18-105-107

CLASSTERICATION NUMBER: US/08/945,826
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CLÁSSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. JOSEPH
REGISTRATION UNDMER: 32,350
REFERENCE/DOCKET NUMBER: 0425:
TELECOMMUNICATION INFORMATION:
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513 MVGDYDROKT
NAME/KEY:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA
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                                                                                                                                                                                                                              Length 522;
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; Sequence 2, Application US/09197503
; Patent No. 6559286
; GENERAL INFORMATION:
    APPLICANT: TSUKITA, Shoichiro
    TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
    NUMBER OF SEQUENCES: 8
; CORRESPONDENCE ADDRESS:
    ADDRESSEE: Birch, Stewart, Kolasch & Birch, ILP
    STRESSE: VA
; CITY: Palis Church
; STATE: VA
                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER: USA
ZIP: 22040-0747
ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: PATEM PC-DOS/MS-DOS
OPERATURG SYSTEM: PC-DOS/MS-DOS
COFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                           100.0%; Score 2590; DB 4;
100.0%; Pred. No. 1e-221;
ive 0; Mismatches 0;
TELEFAX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
                                                                           : 522 amino acids
amino acid
                                                                                                                                                                                                                                                  Best Local Similarity 100.
Matches 490; Conservative
                                                                                                                    ; TOPOLOGY: linear; MOLECULE TYPE: protein US-08-945-826-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           490
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YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGGYTDPRAAKGFMLAMAAFCFIAA 120
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 93.1%; Score 2410.5; DB 4; Length Best Local Similarity 91.2%; Pred. No. 9.3e-206; Matches 447; Conservative 23; Mismatches 19; Indels
                                                                                                COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,826
FILING DATE: 05-NOV-1997
CLASSIFICATION: 536
                                                                                                                                                                                                FILING DATE: 05-NOV-1997
CLASSIFICATION: 536
ATTORNEY AGENT INFORMATION:
NAME: FARACI, C. JOSEPH
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
TELEPHAX: (703) 205-8050
TELEFAX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 4, Application US/09197503
Patent No. 6559286
GENERAL INFORMATION:
                                      ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
LENGTH: 521 amino acids
TYPE: amino acid
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: protein US-08-945-826-4
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US-09-197-503-4
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Patent No. 6489460
GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
TITLE OP INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                              ; Score 2590; DB 4;
; Pred. No. 1e-221;
0; Mismatches 0;
PILING DAID:
CLASSIPCATION:
PRIOR PAPLICATION DATA:
APPLICATION DATA:
APPLICATION NUMBER: US 08/945,826
FILING DATE: 05-NOV-1997
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. Joseph
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELEPROMUNICATION INFORMATION:
TELEPROMUNICATION INFORMATION:
TELEPROMUNE: (703) 205-8050
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 522 amino acide
TYPE: amino acid
TYPE: APPLICATION INFORMATION:
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Best Local Similarity 100.
Matches 490; Conservative
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481 MVGDYDRQKT 490
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                                                                                                            US-08-945-826-6
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          93.1%; Score 2410.5; DB 4; Length 521; 91.2%; Pred. No. 9.3e-206; ive 23; Mismatches 19; Indels 1;
TSUKITA, Shoichiro
VENTION: HUMAN ADHESION MOLECULE OCCLUDIN
         STREET: P.O. Box 747
CITY: Falls Church
STATE: VA
COUNTRY: USA
                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC Compatible
OPERATS SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                                                                                                                                                                   PILING DATE:
CLASSIFICATION:
CLASSIFICATION
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/945,826
FILING DATE: 05-NOV-1997
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. JOSEPH
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECHMUNICATION INFORMATION:
TELEFAX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 4:
SEQUENCE CHARACTERISTICS:
LENGTH: 521 amino acid
TYPE: amino acid
TYPE: ...
1,near
                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/197,503 FILING DATE:
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Best Local Similarity 91.24
Matches 447; Conservative
 APPLICANT: TSUKITA, She
TITLE OF INVENTION: HUN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE: protein
                                                                                                                                                           ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
COMPUTER: IBM PC COM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-197-503-4
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  120 ALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQ
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                                                                                                                   Sequence 6, Application US/08945826
Patent No. 6489460
GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES: 8
CORRESPONDENCE ADDRESS:
ADDRESSEE: Ploc Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747
CITY: Falls Church
                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 22040-0747
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/945,826
FILING DATE: 05-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
NAME: FARACI, C. Joseph
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEPHONE: (703) 205-8000
TELEFAX: (703) 205-8050
INFORMATION FOR SEQ ID NO: 6:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : 521 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 90.0%
Matches 442; Conservative
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512 MVGDÝDŘÓKT 521
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300 NDKRFYPESSYKSTP-VPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRS 358
                                                                                                                                                                     KRTEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSEL 418
                                                                                                                                                                                                                                                               270 DRYDKSNILWDKEHIYDEQPPNVEEWVGNVSAGTQDMPPPPSDYAERVDSPMAYSSNGKV
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
APPLICANT: DUAN, D. ROXANNE
APPLICANT: BILLATIFARD, ALI
APPLICANT: CONAWAY, JOAN W.
APPLICANT: CONAWAY, RONALD C.
TITLE OF INVENTION: ELL2, A New Member of an ELL Family of
TITLE OF INVENTION: RNA POlymerase II Elongation Factors
NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
STREET: 1100 NEW YORK AVENUE, SUITE 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: ISP PC compatible

COMPUTER: ISP PC compatible

COMPUTER: ISP PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/026,343

FILING DATE: Herewith

CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/038,447

FILING DATE: 19-FRB-1997

ATTORNEY/AGENT INFORMATION:
NAME: GOLDSTEIN, JORGE A.
REGERGATION NUMBER: 1498.0880001

TELECOMMUNICATION INFORMATION:
TELEFRHONE: (202) 372-2540

INFORMATION FOR SEQ ID NO: 8:
SEQUIENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 21.9%; Score 566; DB 3; Best Local Similarity 100.0%; Pred. No. 1e-42; Matches 108; Conservative 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence 8, Application US/09026343
Patent No. 6008018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 108 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
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510 KRMVGDYDRRK 520
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MOLECULE TYPE: protein
US-09-026-343-8
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                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 8
US-09-026-343-8
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                                                                                                                                                                                                       390
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                       240
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YGTSLLGGSVGYPYGGSGFGSYGSGYGYGY-GYGYGGYTDPRAAKGFMLAMAAFCFIA 119
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                                                                            1 MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG
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                                                       419 DEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHI
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 90.2%; Score 2335.5; DB 4; Length Best Local Similarity 90.0%; Pred. No. 4.4e-199; Matches 442; Conservative 20; Mismatches 24; Indels
                                                                                                                                                                                                                                                     Sequence 6, Application US/09197503
| Patent No. 655286
| GENERAL INFORMATION:
| APPLICANT: TSUKITA, Shoichiro
| TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
| NUMBER OF SEQUENCES: 8
| CORRESPONDENCES: 8
| CORRESPONDENCES: 8
| CORRESPONDENCES: Birch, Stewart, Kolasch & Birch, LLP
| STREET: P.O. Box 747
| CITY: Falls Church
| CONTY: USA
| CONTY: USA
| CONTY: USA
| COMPUTER READABLE FORM:
| MEDIUM TYPE: Floppy disk
| COMPUTER: TB PC Compatible
| COMPUTER: TB PC COMPATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  479 KKMVGDYDRQK 489
|:||||||||
510 KRMVGDYDRRK 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ; TOPOLOGY: linear; MOLECULE TYPE: protein US-09-197-503-6
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TYPE: PRT
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DWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEY 442
                                              9
                        1 DWIREYPPITSDQQRQLYKRNFDTGLQBYKSLQSBLDBINKELSRLDKELDDYREESBEY
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                                                                                                                                                                                                                                      Sequence 8 Application US/09362871

Patent No. 6379923

GENERAL INFORMATION:

APPLICANT: DOIN, D. ROXANNE

APPLICANT: CONAWAY, JOAN W.

APPLICANT: CONAWAY, ALI

APPLICANT: CONAWAY, ROMALD C.

TITLE OF INVENTION: RNA POlymerase II Elongation Factors

TITLE OF INVENTION: RNA POlymerase II Elongation Factors

TITLE OF SEQUENCES: 34

CORRESPONDENCES: 34

CORRESPONDENCES: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

STREET: 1100 NEW YORK AVENUE, SUITE 600

CITY: WASHINGTON

STATE: D.C.
                                                                                            443 MAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDRQKT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           443 MAAADEYNRIKQVKGSADYKSKKNHCKQIKSKISHIKKMVGDYDRQXT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MAAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDRQKT 108
                                                                                                                                   MAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDRQKT 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA
ZIE: 20005-3934
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/NS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/362,871
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE:
ATTORNEY/AGENT INFORMATION:
NAME: GOLDSTEIN, JORGE A.
REGISTRATION NUMBER: 29,021
REFERENCE/DOCKET NUMBER: 1488.0880001
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 09/026,343
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEPHONE: (202) 371-2600
TELEFAX: (202) 372-2540
TELEFAX: (202) 372-2540
TELEFAX: (202) 372-2540
TELEFAX: 1020 B: SEQUENCE CHARACTERISTICS:
LENGTH: 108 amino acids
TYPE: amino acid
STRANDEDNESS: not relevant
TOPOLOGY: not relevant
MOLECULE TYPE: protein
S-09-362-871-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity 100.0
Matches 108; Conservative
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                                                                                                                                                                                                                                  US-09-362-871-8
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US-09-222-373-5 ; Sequence 5, Application US/09222373 ; Patent No. 6110747

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APPLICANT: BLASCHIK, Orest W.
APPLICANT: BLASCHIK, Orest W.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING TISSUE
TITLE OF INVENTION: PERMEABILITY
TITLE OF INVENTION: PERMEABILITY
FILE REPERENCE: 100086.405C1
CURRENT APPLICATION NUMBER: US/09/222,373
CURRENT FILING DATE: 1994-12-29
EARLIER APPLICATION NUMBER: US 09/001,511
EARLIER PILING DATE: 1997-12-31
NUMBER OF SEQ ID NOS: 52
SOFTWARE: PATENTIN VET: 2.0
SEQ ID NO 5
LENGTH: 48
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Sequence 59, Application US/08996679

Patent No. 6165071

GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: COMPOUNS AND METHODS FOR MODULATING
TITLE OF INVENTION: CELL ADHESION
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSES: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
STATE: Washington
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
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                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER READABLE FORM:

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppdidisk
COMPUTER: IBM PC compatible
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/08/996,679
FILING DATE: 23-DEC-1997
CLASSIFICATION:
NAME: Mari, Daivd J.
REFERENCE/POCKET NUMBER: 31,392
REFERENCE/POCKET NUMBER: 100086.401C1
TELECOMMUNICATION NUMBER: 100086.401C1
                                                                                                                                                                                                                                                                                                                                                                                                                                                 10.2%; Score 263; DB 3; I
ilarity 100.0%; Pred. No. 2.7e-16;
Conservative 0; Mismatches 0;
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TELEPAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 59:
SEQUENCE CHARACTERISTICS:
LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                         , ORGANISM: Homo sapiens
US-09-222-373-5
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Best Local Similarity
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ORGANISM: Artificial Sequence FEATURE:
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hes 48; Conserva
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Best Local Similarity
Matches 48; Conserv
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US-09-113-977C-69
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US-09-510-616-5
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Matches
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Factor No. 6277824
GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
TITLE OF INVENTION: FUNCTION
FILE REPRENCE: 100086 403
CURRENT APPLICATION NUMBER: US/09/113,977C
CURRENT FILING DATE: 1998-07-10
NUMBER OF SEQ ID NOS: 87
SEQ ID NO 69
LENGTH: 48
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                                                                                                                                                                               GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour. Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING
TITLE OF INVENTION: TISSUB PERMEABILITY
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
ADDRESSE: SEED and BERRY LLP
STREET: 6300 Columbia Center
CITY: Seattle
STATE: Washington
COUNTRY: USA
164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 211
                            1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 48;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CUDNIAL: USD.
CUDNIAL: USD.
CUDNIAL: USD.
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/001,511
FILING DATE: 31-DEC-1997
CLASSIPICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Maki, David J.
REGISTRATION: UNMERER: 31,392
REGISTRATION NUMBER: 31,392
REGISTRATION NUMBER: 11,392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
10.2%; Score 263; DB 3; L
Best Local Similarity 100.0%; Pred. No. 2.7e-16;
Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                         Sequence 5, Application US/09001511
Patent No. 6248864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE/DOCKET NUMBER: 10
TELECOMMUNICATION INFORMATION:
TELEPHONE: (206)622-4900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEFAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 5: SEQUENCE CHARACTERISTICS:
LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TYPE: amino acid
STRANDEDNESS: single
TOPOLOGY: linear
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US-09-113-977C-69
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| Patent No. 6310177
| GENERAL INFORMATION:
| APPLICANT: Blaschuk, Orest W. Symonds, James Matthew Gour, Barbara J. TITLE OF INVENTION: COMPONDS AND METHODS FOR MODULATING TISSUE PERMEABILITY
                                                                                                                                                                                                                                  1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
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                                                                                               10.2%; Score 263; DB 3; Length 48; 100.0%; Pred. No. 2.7e-16; ive 0; Mismatches 0; Indels
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                                                                                                                                                                                                      164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQB
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ZIP: 98104

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION NUMBER: US/09/510,616
FILING DATE: 22-Feb--2000
CLASSIFICATION: <Unknown>
OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: Synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ATTORNEY/AGENT INFORMATION:

NAME: Christiansen, William T.

REGISTRATION NUMBER: 44,614

REFERENCE/DOCKET NUMBER: 100086.405C3

TELECOMMUNICATION INFORMATION:

TELEPHONE: (206) 622-4900

TELEPHONE: (206) 622-6031

INFORMATION FOR SEQ ID NO: 5:

SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10.2%; Score 263; DB 3; 1
ilarity 100.0%; Pred. No. 2.7e-16;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED IP LAW GROUP PLLC
STREET: 701 Fifth Avenue, Suite 6300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; SEQUENCE DESCRIPTION: SEQ ID NO: 5:
US-09-510-616-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 78, Application US/09248074; Patent No. 6346512.
FERENAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NUMBER OF SEQUENCES: 46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                  48; Conservative
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## APPLICANT: Gour, Barbara J.

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION

FILE REFERENCE: 100086.401C5

CURRENT APPLICATION NUMBER: US/09/248,074

CURRENT FILING DATE: 1999-02-10

NUMBER OF SEQ ID NOS: 81

SOFTWARE: Patentin Ver. 2.0

SOFTWARE: Patentin Ver. 2.0

SOFTWARE: Patentin Ver. 2.0

SOFTWARE: Patentin Ver. 2.0

CORGANISM: Unknown

FEATURE:

OTHER INFORMATION: Description of Unknown Organism: Occludin cell

OTHER INFORMATION: acids

US-09-248-074-78
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Best Local Similarity 100.0%; Pred. No. 2.7e-16;
Matches 48; Conservative 0; Mismatches 0; Indels
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Search completed: April 1, 2005, 10:04:44 Job time : 65.67 secs

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April 1, 2005, 09:16:14 ; Search time 26.6497 Seconds (without alignments) 725.636 Million cell updates/sec
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293
1 WDRGYGTSLLGGSVGYPYGG......GYGYGYGYGYGGYTDPRAAK
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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                                                                                                         Run on:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Abm84985 Human dia Abm84986 Human dia Aaw34605 Human occ Aba55731 Human occ Add46545 Human Pro Adi47189 Human Pro Adi47189 Human Pro Adi46543 Rat Prote Aaw36654 Mouse occ Aaw34659 Human occ Aaw34659 Human occ Aaw34639 Human occ Aaw34639 Human occ Aaw34639 Human hai Adj92275 Mouse hai Adj92267 Mouse hai Adb60862 Drosophil Adj92267 Mouse hai Adj92267 Mouse hai Adb60862 Drosophil Adj92267 Human hai Abb60862 Drosophil Description ABM84985 ABM84986 ABM84986 AAM34638 AAB35731 AAM36054 AD147189 AD147189 AD147189 AD14548 AD192285 AD192285 AD192285 AD1922185 AD1922185 AD1922185 AD1922185 AD1922185 Length DB % Query Match 100.0 100.0 100.0 100.0 100.0 73.0 73.0 48.1 41.1 Score Result Š

ABP69638 ADJ92187 ABB61235 ADJ92267 ADJ92265 ABB60862

25 110.5 37.7 87 7 ADD3227 227 110.5 37.7 87 7 ADD3227 229 108.5 37.7 84 7 ADD3227 229 108.5 37.7 13.6 14 7 ADD3227 229 108.5 36.7 139 7 ADD22616 32 106.5 36.3 15.4 ABB6923 34 106.5 36.3 15.4 ABB6923 34 106.5 36.3 15.4 ADD2227 36.3 16.5 36.3 15.4 ADD2227 36.3 16.3 15.4 ADD3227 36.3 16.5 36.3 15.4 ADD322 36.3 16.5 36.3 15.4 ADD322 37 105.5 36.9 89 7 ADJ9222 37 105.5 36.9 89 7 ADJ9228 38 105 35.8 341 4 AAB8193 1	Adj92277 Mouse hai Adj92273 Mouse hai Adj92273 Mouse hai Abu09590 Tick infe Add26165 Protein r Abb69237 Drosophil Adj92269 Mouse hai Aay13500 Tissue ce Aam50381 Tick ceme Abu09592 Tick infe Adj92211 Human hai Adj92211 Human hai Adj92211 Human hai Adj92213 Human nai Adj92281 Mouse hai Adj92281 Mouse hai Adj92281 Auman ncol Aab5703 Human ncol Aab5703 Human het Aab81935 Marmoset Abm80856 Tumour-as Aaw26552 Human het	IENTS		pprotein SEQ ID NO:5234. nd therapeutic polynucleotide; dithp.			Altus CM, Pitts SJ, Elder LV; Altus CM, Pitts SJ, Elder LV; r IS, Banville SC, Reddy TP; r SK, Wang X, Au AP, Gerstin EH; P, Shen EJ, Wu MC, Stuve LL; Wingrove J, Vitt UA, Kirton ES; witz EL, Ma Y, Jackson JL, Gietzen D;	polynucleotides and polypeptides, useful sease or disorder associated with human inflammatory disorders, in gene therapy or an additional disorders, in gene therapy or an diagnostic and therapeutic polynucleotides sequences defined in the specification. A on may have a use in gene therapy. The human lynucleotides (dithp) or polypeptides may be
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used to diagnose a particular condition, disease or disorder associated with human molecules, e.g. cell proliferative disorders, autoimmune/inflammatory disorders, developmental disorders, endocrine disorder, neurological disorders, gastrointestinal disorders, or infections caused by virus, bacteria, fungi or parasite. The dithp molecules may also be used in genetic mapping, in identifying individuals from minute biological samples, in detecting single nucleotide polymorphisms, as molecular weight markers, and for somatic or germline gene therapy. The present sequence represents a dithp protein of the invention. Note: The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from NIPO at www.wipo.int/pct/en/sequences/listing.htm
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                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
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Gaps

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100.0%; Score 293; DB 8; Length 508; 100.0%; Pred. No. 1e-22; ive 0; Mismatches 0; Indels

50; Conservative

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Best Local Similarity

Query Match Matches

Sequence 508 AA;

89 WDRGYGTSLLGGSVGXPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAK 138

AAW36052 standard; protein; 522 AA

**AAW36052** RESULT

Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.

Homo sapiens. WO9732982-A1. 97WO-JP000665 96JP-00049880 96JP-00331944

05-MAR-1997; 07-MAR-1996; 12-DEC-1996;

12-SEP-1997,

CO LTD

(EISA ) EISAI

Human occludin protein sequence.

25-MAR-1998 (first entry)

AAW36052;

1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAK

Gietzen D; New diagnostic and therapeutic polynucleotides and polypeptides, useful in diagnosing a condition, disease or disorder associated with human molecules, e.g. autoimmune or inflammatory disorders, in gene therapy or wright RJ, Bruns CM, Marjanovic MM, Shen F;
TA, Suchorolbki MT, Altus CM, Pitts SJ, Blder LV;
Delegane AM, Panesar IS, Banville SC, Reddy TP;
Blanchard JL, Panzer SR, Wang X, Au AP, Gerstin EH;
Anderson SB, Rioux P, Shen EJ, Wu MC, Stuve LL;
Spiro PA, Stewart EA, Wingrove J, vitt UA, Kirton ES;
g M, Policky JL, Hurwitz BL, Ma Y, Jackson JL, Gietzes 12-SEP-2002; 2002US-0410259P. 12-SEP-2002; 2002US-0410260P. 12-SEP-2003; 2003WO-US028227 WPI; 2004-329368/30. N-PSDB; ACN43638. (INCY-) INCYTE CORP. Rb, Kwong M, Shi X, WO2004023973-A2 in gene mapping Mooney EM, D Stevens KA, Peralta CH, Homo sapiens 25-MAR-2004 Schmidt JP, Harthshorne Patury S, Lagace RE, ABM84986 

which is a constituent protein of membrane tight junctions. Antibodies raised against the protein are used to assay for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent cell-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin expression. Therapeutic polynucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the bloodbrain barrier. Primers that hybridise to the occludin DNA sequence can be used to detect occludin DNA by PCR The present sequence represents human occludin, a novel adhesion molecule DNA encoding human, dog and mouse occludin(s) - useful for screening for substances influencing occluding expression. Claim 1; Page 15-17; 36pp; Japanese. WPI; 1997-470546/43. N-PSDB; AAT97972 Tsukita S; 

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Sequence 522 AA;

The invention relates to novel diagnostic and therapeutic polynucleotides selected from one of the 2722 sequences defined in the specification. A polynucleotide of the invention may have a use in gene therapy. The human diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be used to diagnose a particular condition, disease or disorder associated

Claim 27; Page; 190pp; English

89 WDRGYGTSLLGGSVGYPYGGSGFGSYGYGYGYGYGYGYGYGYGYTDPRAAR 138

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     This protein comprises human occludin, an integral transmembrane protein specifically associated with tight junctions that functions in forming intercellular seals. Its amino acid sequence was deduced from overlapping cDNA clones (see AAT93752) obtained from a human liver cDNA library. Occludin can be used to reduce tissue permeability. Occludin inhibitors can be used to enhance delivery of drugs (or gene therapy vectors) by increasing absorption across endothelial or epithelial barriers, i.e. transmucosal or transvascular drug delivery. Inhibitors include occludin surface loop peptides that inhibit adhesion and/or barrier properties, or surface loop peptides that inhibit adhesion and/or barrier properties, or claimed for identifying occludin inhibitors and for screening for the presence or absence of occludin inhibition in a sample
                                                                                                                                                                                                                                                                             drug absorption; drug delivery; gene therapy;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ed human occludin protein - useful for increasing drug delivery endothelial or epithelial barriers, or for reducing tissue
                               Gaps
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                                                         1 WDRGYGTSLLGGSVGYPYGGSGPGSYGSGYGYGYGYGYGYGYTDPRAAK 50
 Length 522;
                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                    /label= Extracellular loop
/note= "inhibitor peptide (Claim 10)"
                                                                                                                                                                                                                                                                                                                                                                 90. .138
/labal= Extracellular_loop
/note= "inhibitor peptide (Claim 9)"
196. .246
100.0%; Score 293; DB 2;
100.0%; Pred. No. 1.1e-22;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
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tissue permeability; cell adhesion.
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                                                                                                                                                          AAW34638 standard; protein; 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Van Itallie CM;
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                                                                                                                                                                                                                  (first entry)
                               Conservative
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N-PSDB; AAT93752.
Query Match
Best Local Similarity
Matches 50; Conserv
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                                                                                                                                                                                                                                               Human occludin.
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                                                                                                                                                                                                                                                                                                                       Homo sapiens
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                                                                                                                                                                                      AAW34638;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isolated
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention relates to a pharmaceutical composition used for gene promoter, a transfection vehicle and an agent to disrupt the function of the junctional complex in the cells. The pharmaceutical composition of cytostatic, cardiant, vasotropic, antiinflammatory and antilipaemic cytostatic, cardiant, vasotropic, antiinflammatory and antilipaemic cytostatic, rhe pharmaceutical composition is useful for gene therapy and for enhancing efficiency of gene followery to cells. The composition is useful for gene therapy of cystic fibrosis, inflammatory or fibrotic lung diseases, peripheral vascular disease, coronary arterial diseases, restenosis, hypercholesterolaemia and cancer. The present sequence represents the human occludin protein. Occludin is used in the invention to determine the effect of the junctional inhibitors used in the
                                                                                                                                                                 Pharmaceutical composition; gene therapy; junctional complex disruption; cytostatic; cardiant; vasotropic; antiinflammatory; antilipaemic; cytostic fibrosis; inflammatory disease; fibrotic lung disease; peripheral vascular disease; coronary arterial disease; restenosis; hypercholesterolaemia; cancer; human; occludin.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Novel pharmaceutical composition useful for gene therapy, comprises nucleic acid encoding therapeutic gene and a promoter, transfection vehicle and an agent which disrupts function of junctional complex in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  West MR;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                   Human occludin amino acid sequence.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure, Fig B; 51pp; English.
                               AAB35731 standard; protein; 522
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99GB-00009073.
99GB-00009297.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLAX ) GLAXO GROUP LTD.
(UYNC-) UNIV NORTH CAROLINA.
                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     50; Conservative
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                                                                                                                                                                                                                                                                                                          WO200062815-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                             15-APR-1999;
20-APR-1999;
22-APR-1999;
                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                 19-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                             15-APR-1999;
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                                                                                                                                                                                                                                                                                                                                          26-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               13-SEP-1999
                                                                 AAB35731;
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Matches
                 AAB3573.
RESULT
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Query Match
Best Local Similarity 100.0%; Pred. No. 1.16-22;
Matches 50; Conservative 0; Mismatches 0; Indels

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Gaps

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14-AUG-2002; 2002WO-US025765.
                                                                                            D'urso D,
                                                                                                            WPI; 2003-268312/26
                                                                                                                    GENBANK, NP 002529.
                                                                                                                                                                                                                                                                                                                                                                                                                       Sequence 522 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     06-MAY-2004
27-FEB-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AD147189;
                                                                                           Woolf C,
                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
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                                                                                                                                                                                                                                                                                                   The invention comprises a method for assessing whether a patient is afflicted with breast cancer or ovarian cancer. The method involves the use of specific DNA markers. The method of the invention is useful in the detection and treatment of ovarian and breast cancer. Amino acid sequences ABJ37025 - ABJ37080 represent human breast/ovarian cancer-
                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                          Determining the presence of breast cancer in an individual, involves
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human; pain; neuronal tissue; gene therapy;
spinal segmental nerve injury; chronic constriction injury; CCI;
spared nerve injury; SNI; Chung.
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                                                                                                                                                                                                                                                                                                                                                                                                                1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 293; DB 6; Length 522; 100.0%; Pred. No. 1.1e-22; ive 0; Mismatches 0; Indels
                                                                   Human breast cancer / ovarian cancer related protein #52.
                                                                                    Human; cytostatic; breast cancer; ovarian cancer
                                                                                                                                                                                                                                                                                   Disclosure; Page 223-224; 233pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human Protein NP_002529, SEQ ID NO 12226.
                                                                                                                                                                                                                                                                   using specific polynucleotide markers.
                 ABJ37076 standard; protein; 522 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADD46545 standard; protein; 522 AA
                                                                                                                                                                       21-JUN-2001; 2001US-0300159P.
27-JUN-2001; 2001US-0301351P.
                                                                                                                                                      21-JUN-2002; 2002WO-US019773
                                                                                                                                                                                                (MILL-) MILLENNIUM PHARM INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                               50; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (revised)
                                                                                                                                                                                                                                  WPI; 2003-267848/26.
                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                          N-PSDB; ABT31945.
                                                                                                                                                                                                                                                                                                                                               related proteins
                                                                                                                                                                                                                                                                                                                                                               Sequence 522 AA;
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                                                                                                                    WO2003000012-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unidentified
                                                                                                     Homo sapiens
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29-JAN-2004
                                                 01-MAY-2003
                                                                                                                                      03-JAN-2003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADD46545;
                                  ABJ37076;
                                                                                                                                                                                                                 Veiby OP;
                                                                                                                                                                                                                                                                                                                                                                               Query Match
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                                                                                                                                                                                                                                                                                                                                                                                               Matches
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The invention discloses a composition comprising two or more isolated rate or human polynucleotides or a polynucleotide which represents a fragment, derivative or allalic variation of the nucleic acid sequence. Also claimed are a vector comprising the novel polynucleotide, a host cell comprising the vector, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain and a kit to perform the method, an array, a method for identifying an agent that increases or decreases the expression of the polynucleotide sequence that increases or decreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the composition, a method for identifying a compound that regulates the activity of one or more of the composition, a method for identifying a compound comparing a pharmaceutical composition, a method for identifying a compound seglul in treating activity in an animal of one or more of the polypeptides given in the paper in an animal of one or more of the polypeptides given in the composition and a pharmaceutical composition contains and a pharmaceutical composition composition contains and a pharmaceutical composition contains and contains and contains and contains and contains 
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Note: The sequence data for this parent did not form part of the printed specification, but was obtained in electronic form directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mucosal delivery; permeabilising peptide;
mucosal epithelial paracellular transport; epithelial junction;
epithelial membrane adhesive protein; junctional adhesion molecule; JAM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
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                                                                                                                                                                                                                                                                                                                                                                                                                              Costigan M;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 1; Page; 1017pp; English.
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14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                        (GEHO ) GEN HOSPITAL CORP. (FARB ) BAYER AG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 100.
Matches 50; Conservative
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Quay SC;

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The present sequence represents canine occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. The present sequence is encoded by AAT9793, which encodes an extra 16 amino acid residues in the correct reading frame, which are not shown in the specification. Antibodies raised against the protein are used to assay for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent cell-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin expression. Therapeutic polynucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the blood-brain barrier. Primers that hybridies to the occludin DNA sequence can be used to detect occludin DNA by PCR
                                                                                                                                                                       DNA encoding human, dog and mouse occludin(s) - useful for screening for substances influencing occluding expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rat; pain; neuronal tissue; gene therapy; spinal segmental nerve injury; chronic constriction injury; CCI; spared nerve injury; SNI; Chung.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   New composition comprising two or more isolated polypeptides, useful for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYGYAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  89.6%; Score 262.5; DB 2; Length 505;
88.0%; Pred. No. 1.6e-19;
iive 4; Mismatches 1; Indels 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Costigan M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rat Protein BAA36681, SEQ ID NO 12224.
                                                                                                                                                                                                                                     Claim 4; Page 17-20; 36pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADD46543 standard; protein; 523 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Befort K,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14-AUG-2002; 2002WO-US025765.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 88.0
Matches 44; Conservative
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                        (EISA ) EISAI CO LTD.
                                                                                                       WPI; 1997-470546/43.
N-PSDB; AAT97973.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2003-268312/26
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENBANK; BAA36681.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 505 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO2003016475-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unidentified
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29-JAN-2004
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                                                               Tsukita S;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADD46543;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
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                                                                                                                                                                                                                                                                                                                                                                                                      Composition comprising biologically active agent and permeabilizing peptide that reversibly enhances mucosal epithelial paracellular transport by modulating epithelial junctional structure and/or physiology
occludin; claudin; sexual dysfunction; male erectile sexual dysfunction;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention relates to a novel composition comprising a biologically active agent and mucosal delivery-enhancing effective amount of permeabilising peptide that reversibly enhances mucosal epithelial paracellular transport by modulating epithelial junctional structure and/or physiology in a mammal. The agent of the invention inhibits homotypic binding of epithelial membrane adhesive protein chosen junctional adhesion molecule (JAM), occludin and claudin. The biologically active agent is effective for treatment of sexual dysfunction. For example male erectile sexual dysfunction or female sexual dysfunction. The present sequence is that of the human occludin protein which is related to the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         89 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGGGTDPRAAK 138
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         / Match , 100.0%; Score 293; DB 8; Local Similarity 100.0%; Pred. No. 1.1e-22; Nes 50; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; SEQ ID NO 900; 426pp; English.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Canine occludin protein sequence
                   female sexual dysfunction; human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           96JP-00049880.
96JP-00331944
                                                                                                                                                                                       24-JUN-2003; 2003WO-US019994
                                                                                                                                                                                                                                 28-JUN-2002; 2002US-0392512P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        97WO-JP000665
                                                                                                                                                                                                                                                                           (NAST-) NASTECH PHARM CO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                              WPI; 2004-091087/09.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 522 AA;
                                                                                                   WO2004003145-A2
                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  25-MAR-1998
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12-DEC-1996;
                                                                                                                                             08-JAN-2004
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Best Local Si
Matches 50,
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RESULT 9 AAW36053

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The present sequence represents mouse occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. Antibodies raised against the protein are used to assay for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent cell-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin expression. Therapeutic polynucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the bloodused to detect occludin DNA by PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This peptide (#2) comprises amino acids 113-135 of human occludin (see AMM3463B) plus an N-terminal Cys residue to allow conjugation for antibody production. Peptide #1 (see AMM34639) comprises amino acids 90-112 plus N-terminal Cys. Together these contiguous peptides compose the putative first extracellular loop of the occludin protein. They were used to raise rabbit polyclonal anti-peptide antibodies. Both peptides are capable of inhibiting adhesion in occludin-transfected fibroblasts. Occludin inhibitors can be used to enhance delivery of drugs (or gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Occludin; inhibitor; human; drug absorption; drug delivery; gene therapy; tissue permeability; cell adhesion; antibody.
                                              DNA encoding human, dog and mouse occludin(s) - useful for screening for substances influencing occluding expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Isolated human occludin protein - useful for increasing drug delivery across endothelial or epithelial barriers, or for reducing tissue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 WDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGY-GYGYGYGYGYTDPRAAK 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 214; DB 2;
Pred. No. 2.2e-14;
1; Mismatches 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human occludin peptide 1 (aa113-135).
                                                                                                                        Claim 5; Page 20-22; 36pp; Japanese.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW34640 standard; peptide; 24 AA.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                73.0%;
80.4%;
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Best Local Similarity 80.499
Matches 41, Conservative
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N-PSDB; AAT97974.
                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 521 AA;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14-MAR-1997;
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Synthetic.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW34640
  8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                              The invention discisles a composition comprising two or more isolated rate or chained are a vector comprising the novel between the invention discisles a composition of the nucleic acid sequence. Also derivative or allelic variation of the nucleic acid sequence. Also comprising the vector, a method for identifying a nucleotide, a host cell comprising the vector in an entay, a method for identifying a nucleotide sequence which is differentially regulated in an animal subjected to pain an agent that increases of accreases the expression of the polynucleotide sequence that is differentially expressed in neuronal tissue of a first animal composition of a polynucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound which regulates the expression of the polynucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the polynucleotides, a method for producing a pharmaceutical composition, a method for identifying a compound that regulates the activity in an animal of one or more of the polypeptides or their antibodies. The polynucleotide or the compound that colypeptides or their antibodies. The polynucleotide or the compound that or more pain and appared nerve injury (CDI) and spared nerve injury (SNI) in an animal (e.g. gene therapy). The sequence presented is a rat protein (described in Table 3 of the specification) which is differentially expressed during pain. Or the sequence data for this patent did not form part of the printed specification, but was obtained in electronic form directly from WIPO at
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2,
                                                                                                 invention discloses a composition comprising two or more isolated rat
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80.4%; Pred. No. 2.2e-16;
wismatches 5; Indels
     preparing a medicament for treating pain in an animal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ftp.wipo.int/pub/published_pct_sequences.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW36054 standard; protein; 521 AA
                                                     Example 1, Page; 1017pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mouse occludin protein sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96JP-00049880.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW36054;
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Query Match

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Matches

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Gaps

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Length 521; 5; Indels

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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AMM34638) plus an N-terminal Cys residue to allow conjugation for antibody production. Peptide #2 (see AAM34640) comprises amino acids 113-1135 plus N-terminal Cys. Together these contiguous peptides compose the putative first extracellular loop of the occludin protein. They were used to raise rabbit polyclonal anti-peptide antibodies. Both peptides are capable of inhibiting adhesion in occludin-transfected fibroblasts. Occludin inhibitors can be used to enhance delivery of drugs (or gene therapy vectors) by increasing absorption across endothelial or epithelial barriers, i.e. transmucosal or transvascular drug delivery. Inhibitors include occludin surface loop peptides that inhibit adhesion and/or barrier properties, or antibodies that interact with occludin or
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Occludin; inhibitor; human; drug absorption; drug delivery; gene therapy; tissue permeability; cell adhesion; antibody.
therapy vectors) by increasing absorption across endothelial or epithelial barriers, i.e. transmucosal or transvascular drug delivery. Inhibitors include occludin sunface loop peptides that inhibit adhesion and/or barrier properties, or antibodies that interact with occludin or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Isolated human occludin protein - useful for increasing drug delivery across endothelial or epithelial barriers, or for reducing tissue permeability.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptide (#1) comprises amino acids 90-112 of human occludin (see
                                                                                                                                                                      Gaps
                                                                                                                                                                      ö
                                                                                                                                      Length 24;
                                                                                                                                                                    0; Indels
                                                                                                                                    Score 141; DB 2; L
Pred. No. 5.5e-08;
                                                                                                                                 Query Match 48.1%; Score 141; DE Best Local Similarity 100.0%; Pred. No. 5.5 Matches 23; Conservative 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                              Human occludin peptide 1 (aa90-112).
                                                                                                                                                                                                      25 SYGSGYGYGYGYGYGYGYTDPR 47
                                                                                                                                                                                                                        2 SYGSGYGYGYGYGYGYGYTDPR 24
                                                                                                                                                                                                                                                                                                                             Ź
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 2; Page 17; 49pp; English.
                                                                                                                                                                                                                                                                                                                       AAW34639 standard; peptide; 24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97WO-US005809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96US-0013625P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Van Itallie CM,
                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1997-470640/43
                                                                   occludin receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      occludin receptors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYYA ) UNIV YALE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 24 AA;
                                                                                                   Sequence 24 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9733605-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14-MAR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-MAR-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Anderson JM,
                                                                                                                                                                                                                                                                                                                                                                                            02-MAR-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-SEP-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Synthetic
                                                                                                                                                                                                                                                                                                                                                           AAW34639;
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DNAs encoding 39 Keratin-associated proteins localized on human chromosome 21, useful for screening binding and expression modifiers and as cosmetic and therapeutic agents for hair disorders.
                                                                                                 hair; keratin-associated protein; KAP; mouse; keratin; toiletry;
therapeutic; hair growth promoter; hair disorder.
                                                                                    Mouse hair keratin-associated-protein SEQ ID NO:144.
                                                                                                                                                                                                                                                                     Example 7; SEQ ID NO 144; 352pp; Japanese.
24
       DRGYGTSLLGGSVGYPYGGSGFG 24
                                              Ş
DRGYGTSLLGGSVGYPYGGSGFG
                                                                                                                                                                                      (UYKE-) UNIV KEIO.
(NIPR-) JAPAN SOC PROMOTION SCI.
                                                                                                                                                                                                           Shimizu N;
                                             ADJ92285 standard; protein; 62
                                                                                                                                                             13-NOV-2002; 2002WO-JP011851.
                                                                                                                                                                          13-NOV-2001; 2001JP-00348050
                                                                        06-MAY-2004 (first entry)
                                                                                                                                                                                                           Shibuya K,
                                                                                                                                                                                                                        WPI; 2003-493307/46.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 present invention.
                                                                                                                                                                                                                              P-PSDB; ADJ92284.
                                                                                                                                  WO2003042387-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 62 AA;
                                                                                                                      Mus musculus.
                                                                                                                                                22-MAY-2003
                                                           ADJ92285;
N
                                                                                                                                                                                                           Kudo J,
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4

Gaps

7;

Length 62; Indels

Score 120.5; DB 7; Pred. No. 2e-05; 4; Mismatches 9;

cn 41.1%; 1 Similarity 57.4%; 27; Conservative

Best Local Similarity Matches 27; Conserv

Query Match

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Gaps

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0; Indels

43.7%; Score 128; DB 2; I 100.0%; Pred. No. 1.3e-06; ive 0; Mismatches 0;

Query Match 43.7 Best Local Similarity 100. Matches 23; Conservative

Length 24;

4 ;

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hair; keratin-associated protein; KAP; mouse; keratin; toiletry; therapeutic; hair growth promoter; hair disorder.
43
        10 GLGSGIRGFGNLGYGYGCGCGFGGYGYGSGYGRYGYFRPLYYGGY 56
GYGTSLLG-GSVGYPYG-GSGFGSYGSGYG-YGYGYG----YGGY
                                                                                         Mouse hair keratin-associated-protein SEQ ID NO:134.
                                                                                                                                                                                                                                                                                  Example 7; SEQ ID NO 134; 352pp; Japanese
                                               ADJ92275 standard; protein; 141 AA
                                                                                                                                                                                                (UYKE-) UNIV KEIO.
(NIPR-) JAPAN SOC PROMOTION SCI.
                                                                                                                                                                                                                     Shimizu N;
                                                                                                                                                                     13-NOV-2002; 2002WO-JP011851.
                                                                                                                                                                                   13-NOV-2001; 2001JP-00348050.
                                                                           (first entry)
                                                                                                                                                                                                                     Kudo J, Shibuya K,
                                                                                                                                                                                                                                  WPI; 2003-493307/46.
P-PSDB; ADJ92274.
                                                                                                                                          WO2003042387-A1.
                                                                                                                            Mus musculus.
                                                                           06-MAY-2004
                                                                                                                                                       22-MAY-2003.
                                                             ADJ92275;
                                   RESULT 15
                                          ADJ92275
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNAs encoding 39 Keratin-associated proteins localized on human chromosome 21, useful for screening binding and expression modifiers and as cosmetic and therapeutic agents for hair disorders.
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41.1%; Score 120.5; DB 7; Length 141; 53.8%; Pred. No. 4.3e-05;

Query Match Best Local Similarity

present invention Sequence 141 AA;

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13; Gaps
                                                                                        63 gycsgygcrcorcycsgychcycsgycrcorcycscyc-cycycscrccy 113
                                               4 GYGTSLLG-GSVGY--PYGGSGFGS-----YGSGYGYGYGYGYGYGGY
  8; Indels
3; Mismatches
  28; Conservative
  Matches
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Search completed: April 1, 2005, 10:10:09 Job time : 27.6497 secs

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April 1, 2005, 09:16:13 ; Search time 137.553 Seconds (without alignments) 122.943 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GVNPTAQSSGSLYGSQIYAL......LYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Published Applications AA:*

1: \cgn2_6/ptodata/2/pubpaa/US07_PUBCOMB.pep:*

2: \cgn2_6/ptodata/2/pubpaa/PCT_RBW_PUB.pep:*

2: \cgn2_6/ptodata/2/pubpaa/RCT_RBW_PUB.pep:*

4: \cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

5: \cgn2_6/ptodata/2/pubpaa/US06_NEW_PUB.pep:*

6: \cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

7: \cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

8: \cgn2_6/ptodata/2/pubpaa/US08_NEW_PUB.pep:*

9: \cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

10: \cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

11: \cgn2_6/ptodata/2/pubpaa/US08_PUBCOMB.pep:*

11: \cgn2_6/ptodata/2/pubpaa/US09_PUBCOMB.pep:*

13: \cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

14: \cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

15: \cgn2_6/ptodata/2/pubpaa/US10A_PUBCOMB.pep:*

16: \cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep:*

16: \cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep:*

17: \cgn2_6/ptodata/2/pubpaa/US10C_PUBCOMB.pep:*

18: \cgn2_6/ptodata/2/pubpaa/US10D_PUBCOMB.pep:*

19: \cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*

10: \cgn2_6/ptodata/2/pubpaa/US10B_PUBCOMB.pep:*
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5.1.6
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1413372 seqs, 331592847 residues
                                                                                                                                                                                                                                                                                                                                                          US-09-891-064A-2_COPY_196_246
275
GenCore version
Copyright (c) 1993 - 2005
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Maximum Match 100%
Listing first 45 summaries
                                                                                                                                        OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 200000000
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Perfect score:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Searched:
                                                                                                                                                                                                                      Run on:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Sequence 2, Appli		Sequence 900, App	o,									Sequence 5, Appli
SUMMARIES	a.	US-09-891-064A-2	US-10-176-847-104	US-10-601-953-900	US-09-769-145-78	US-10-105-008-78	US-10-006-869-62	US-10-193-653-69	US-10-395-032-62	US-10-425-557-78	US-10-412-701-78	US-10-632-678-78	US-10-714-564A-1352	US-10-885-482-5
	80	6	14	15	σ	14	14	14	15	15	15	16	16	11
	% Query Match Length DB	522	522	522	48	48	48	48	48	48	48	48	48	48
	% Query Match	100.0	100.0	100.0	92.6	92.6	92.6	92.6	92.6	92.6	92.6	92.6	92.6	92.6
	Score	275	275	275	263	263	263	263	263	263	263	263	263	263
	Result No.	7	8	m	4	2	9	7	۵	6	10	11	12	13

RESULT

Sequence 15, Appl	15,	, ,	7	Sequence 46, Appl	æ	41	47	4	Sequence 40, Appl	Sequence 45, Appl	Sequence 39, Appl	Sequence 44, Appl	Sequence 38, Appl	Sequence 209220,	Sequence 17, Appl	Sequence 12, Appl	Sequence 738, App	Sequence 843, App	Sequence 739, App	Sequence 17, Appl	'n	'n		-	•		_	Sequence 732, App	•		• •
US-09-778-026-15	10-648	-01	US-10-885-482-7	10-885	10-885	US-10-601-953-41	10-601	10-601-9	-10-601-95	10-601-9	US-10-601-953-39	US-10-601-953-44	10-601-9	10-424	US-09-778-026-17	US-10-119-537-12	2-73	US-10-601-953-843	US-10-322-266-739	US-10-648-854-17	US-10-885-482-2	-601-953	US-10-437-963-183064	US-10-462-452-731	7	-109-01-	953	-10-322-2	US-10-322-266-733	1	US-10-108-605-123
10	16	17	17	17	17	15	15	15	15	15	15	15	15	15	ព	14	15	15	16	16	11	15	16	15	15	15	15	16	16	16	13
47	47	48	48	51	20	19	19	17	17	15	15	13	13	165	10	10	10	10	10	10	10	11	66	10	10	10	10	10	10	953	378
91.3	91.3	88.4	84.4	80.5	55.3	39,3	38.9	36.0	34.9	32.0	29.8	28.7	24.7	22.4	22.2	22.2	22.2	22.2	22.2	22.2	22.2	21.5	21.5	21.1	21.1	21.1	21.1	21.1	21.1	21.1	20.9
251	251	243	232	221.5	152	$\sim$	$\sim$	66	96	88	82	79	68	61.5	61	61	61	61	61	61								58			57.5
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

# ALIGNMENTS

```
Sequence 2, Application US/09891064A

Patent NO. US20020082391A1

GENERAL INFORMATION:
APPLICANT: James M. Anderson
APPLICANT: James M. Van Itallie
TITLE OF INVENTION: Human Occludin, Its Uses and Enhancement of Drug
TITLE OF INVENTION: Absorption Using Occludin Inhibitors
FILE REFERENCE: OCR-754.CIP
CURRENT APPLICATION NUMBER: US/09/891,064A
CURRENT FILING DATE: 2001-06-25
PRIOR APPLICATION NUMBER: US 09/142,732
PRIOR PILING DATE: 1998-09-15
NUMBER OF SEQ ID NOS: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 275; DB 9;
100.0%; Pred. No. 3.9e-28;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                          ; NAME/KEY: peptide
; LOCATION: complete sequence
; CTHER INFORMATION: human occludin
US-09-891-064A-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 100.
Matches 51, Conservative
                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Homo sapiens
RESULT 1
US-09-891-064A-2
                                                                                                                                                                                                                                                                                                           SEQ ID NO 2
LENGTH: 522
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APPLICANT: Blaschuk, Orest W. APPLICANT: Gour, Barbara J. APPLICANT: Gour, Barbara J. APPLICANT: Gour, Barbara J. APPLICANT: Farookhi, Riaz APPLICANT: Parookhi, Riaz APPLICANT: Ali, Annar TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION FILE REPRENCE: 100086.401D1 CURRENT APPLICATION NUMBER: US/10/105,008 CURRENT FILING DATE: 2002-03-22 NUMBER OF SEQ ID NOS: 99 SOFTWARE: Patentin Ver. 2.0 SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
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APPLICANT: Symonds, James Matthew
APPLICANT: Symonds, James Matthew
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL
TITLE OF INVENTION: CADHERIN-MEDIATED FUNCTIONS
FILE REFERENCE: 100086.407C7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 OTHER INFORMATION: Description of Unknown Organism: Occludin cell OTHER INFORMATION: adhesion recognition sequnce and flanking amino CHERR INFORMATION: acids
US-10-105-008-78
                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: Description of Unknown Organism: Occludin cell OTHER INFORMATION: adhesion recognition sequnce and flanking amino OTHER INFORMATION: acids
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APPLICANT: Hu, Zengjian
TITLE OF INVENTION: PEPTIDOMIMETIC MODULATORS OF CELL ADHESION
FILE REFERENCE: 100086.413C1
CURRENT APPLICATION NUMBER: US/09/769,145
CURRENT FILING DATE: 2001-01-24
PRIOR PRILING DATE: 2000-01-24
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 78
LENGTH: 48
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GVNPTAQSSGSLYGSQIYALCNQPYTPAATGLYVDQYLYHYCVVDPQE 48
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Pred. No. 9.2e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 95.6%; Score 263; DB 9; Length 48; Best Local Similarity 100.0%; Pred. No. 9.2e-28; Matches 48; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-10-105-008-78
; Sequence 78, Application US/10105008
; Publication No. US20030065136A1
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 62, Application US/10006869; Publication No. US20030082166A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                TYPE: PRT
ORGANISM: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM: Unknown
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; OTHER INFORM
US-09-769-145-78
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| Sequence 900, Application US/10601953
| Publication No. US20040077540A1
| GENERAL INFORMATION: Compositions And Methods For Modulating Physiology Of Epithelial TITLE OF INVENTION: Unctional Adhesion Molecules For Enhanced Mucosal Delivery Of TITLE OF INVENTION: Therapeutic Compounds
| TITLE OF INVENTION: Therapeutic Compounds | TITLE OF INVENTION: Unmber: US/10/601,953
| TITLE OF INVENTION: UNMBER: US/10/601,953
| CURRENT FPLIAG DATE: 2002-06-28
| PRIOR FILLING DATE: 2002-06-28
| NUMBER OF SEQ ID NOS: 900
| SEQ ID NOS: 900
| LENGTH: 522
                    Sequence 104, Application US/10176847

Publication No. US20030066636A1

GENERAL INFORMATION:
GENERAL INFORMATION:
TITLE OF INVENTION: OMPOSITIONS, KITS, AND METHODS FOR
TITLE OF INVENTION: IDENTIFICATION, ASSESSMENT, PREVENTION, AND THERAPY OF BREAST
FILE REPERENCE: MRI-039
CURRENT APPLICATION NUMBER: US/10/176,847
CURRENT APPLICATION NUMBER: US/10/176,847
SOFTWARE: FALSE OF NIOS: 112
SOFTWARE: FALSE OF WINDOWS Version 4.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 275; DB 14;
Pred. No. 3.9e-28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
100.0%; Score 275; D
Best Local Similarity 100.0%; Pred. No. 3.9
Matches 51; Conservative 0; Mismatches
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Patent No. US20020168761A1
GENERAL INFORMATION:
APPLICANT: Gour, Barbara J.
APPLICANT: Blaschuk, Orest W.
APPLICANT: All, Anmar
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Chen, Zhigang
Michaud, Stephanie
Wang, Shoameng
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ORGANISM: Artificial Sequence
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US-10-176-847-104
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LENGTH: 522
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ORGANISM: Unknown
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APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE TITLE OF INVENTION: FUNCTION FILE OF INVENTION: FUNCTION FILE SEPRENCE: 100086.40302
CURRENT APPLICATION NUMBER: US/10/193,653
CURRENT FILING DATE: 2002-07-10
NUMBER OF SEQ ID NOS: 95
SOFTWARE: PATENTIN Ver. 2.0
SEQ ID NO 69
LENGTH: 48
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| Publication No. US20030229199A1
| GENERAL INFORMATION:
| APPLICANT: Blanchuk, Orest W.
| APPLICANT: Gour, Barbara J.
| TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL
| TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL
| TITLE OF INVENTION: COMPOUNDS WID MEDIATED FUNCTIONS
| TITLE OF INVENTION: COMPOUNDS WID MEDIATED FUNCTIONS
| TITLE OF INVENTION: COMPOUNDS NOT WEDIATED FUNCTIONS
| TITLE OF INVENTION NUMBER: US/10/395,032
| CURRENT PILING DATE: 2003-03-21
| NUMBER OF SEQ ID NOS: 4052
| SEQ ID NO 6:
| SEQ ID NO 6:
| LENGTH: 48
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US-10-193-653-69
                                                                                                                                                                                                                                           OTHER INFORMATION: Description of Unknown Organism: Occludin Cell
OTHER INFORMATION: Adhesion Recognition Sequence
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                                                                                                                                                                                                                                                                                                                                                        Length 48
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95.6%; Score 263; DB 14;
Best Local Similarity 100.0%; Pred. No. 9.2e-28;
Matches 48; Conservative 0; Mismatches 0;
CURRENT APPLICATION NUMBER: US/10/006,869
CURRENT FILING DATE: 2001-12-03
NUMBER OF SEQ ID NOS: 4052
SEQ TWARE: Patentin Ver. 2.0
SEQ ID NO 62
LENGTH: 48
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Publication No. US20030109454A1
GENERAL INFORMATION:
APPLICANT: Doherty, Patrick
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                                                                                                                                                              TYPE: PRT
ORGANISM: Unknown
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US-10-193-653-69
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US-10-395-032-62
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   Occludin Cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | GENERAL INTEGRATION:
| APPLICANT: Barbara J. |
| APPLICANT: Blaschuk, Orest W. |
| APPLICANT: Ali, Anmar Ali, Anmar APPLICANT: Ali, Anmar APPLICANT: Ali, Anmar APPLICANT: Ali, Anmar APPLICANT: Chen, Zhigang APPLICANT: Michaud, Stephanie Denise APPLICANT: Michaud, Stephanie Denise APPLICANT: Michaud, Stephanie Denise APPLICANT: Hu, Zenjian |
| APPLICANT: Hu, Zenjian |
| APPLICANT: Hu, Zenjian |
| TITLE OF INVENTION: PRETIDONIMETIC MODULATORS OF CELL ADHESION |
| TITLE REFERENCE: 100086.401Ch; CURRENT APPLICANTON NUMBER: US/10/425,557 |
| CURRENT FILING DATE: 2003-04-28 |
| NUMBER OF SEQ ID NOS: 96 |
| SEQ ID NO 78 |
| SEQ ID NO 78 |
| SEQ ID NO 78 |
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APPLICANT: Gour, Barbara J.
APPLICANT: Ali, Anmar
APPLICANT: Ali, Anmar
APPLICANT: Ni, Form
APPLICANT: Ni, Form
APPLICANT: Wang, Shoamen
APPLICANT: Wang, Shoamen
APPLICANT: Wang, Shoamen
APPLICANT: Wang, Shoamen
APPLICANT: Hu, Zengjian
IITLE OF INVENTION: PEPTIDOMIMETIC MODULATORS OF CELL ADHESION
FILE REPRENCE: 100086, 413C2
CURRENT APPLICATION NUMBER: US/10/412,701
CURRENT FILING DATE: 2003-04-19
NUMBER OF SEG ID NOS: 96
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) OTHER INFORMATION: Description of Unknown Organism:
; OTHER INFORMATION: Adhesion Recognition Sequence
US-10-395-032-62
                                                                                                                      95.6%; Score 263; DB 15;
100.0%; Pred. No. 9.2e-28;
tive 0; Mismatches 0;
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; Sequence 78, Application US/10412701
; Publication No. US20040058864A1
; GENERAL INFORMATION:
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Publication No. US20040006011A1
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                                                                                                                      Query Match
Best Local Similarity
Matches 48; Conserva
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US-10-885-482-5
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APPLICANT: Farookhi, Riaz
APPLICANT: Farookhi, Riaz
APPLICANT: Ali, Anmar
TILLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION
FILE REPERENCE: 100086-401C18
CURRENT APPLICATION NUMBER: US/10/632,678
CURRENT APPLICATION NUMBER: US/10/632,678
NUMBER OF SEQ ID NOS: 101
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 78
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                                               FEATURE: OCCLUDIN: Description of Unknown Organism: Occludin cell OTHER INFORMATION: adhesion recognition sequnce and flanking amino OTHER INFORMATION: acids
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US-10-632-678-78
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Sequence 1352, Application US/10714564A

Publication No. US20040175361A1

GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING
TITLE OF INVENTION: FUNCTIONS OF NONCLASSICAL CADHERINS
FILE REFERENCE: 100086.418

CURRENT APPLICATION NUMBER: US/10/714,564A

NUMBER OF SEQ ID NOS: 1402

SOFTWARE: FastSEQ for Windows Version 4.0

SEQ ID NO 1352
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OTHER INFORMATION: Occludin CAR sequence
US-10-714-564A-1352
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US-10-632-678-78
Sequence 78, Application US/10632678
Publication No. US20040106545A1
GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
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ORGANISM: Artificial Sequence
TYPE: PRT
ORGANISM: Unknown
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ORGANISM: Unknown
                                                                                                                                             US-10-412-701-78
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US-09-778-026-15
; Sequence 15, Application US/09778026
; Publication No. US2003013655A1
; GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
Gour, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR REGULATING
                                                                                 1 GVNPTAQSSGSLYGSQIYALCNQPYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GWNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCWDPQE 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            95.6%; Score 263; DB 17; Length 48; 100.0%; Pred. No. 9.2e-28; Indels iive 0; Mismatches 0; Indels
 Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
ADDRESSE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compartible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/778,026
FILING DATE: 05-Feb-2001
Query Match 95.6%; Score 263; DB 16; Best Local Similarity 100.0%; Pred. No. 9.2e-28; Matches 48; Conservative 0; Mismatches 0;
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COMPUTER READABLE FORM:
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Best Local Similarity
Matches 48; Conserv
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Sequence 15, Application US/10648854
Sequence 15, Application US/10648854
Publication No. US20040132651A1
GENERAL INFORMATION:
GENERAL INFORMATION: Blaschuk, Orest W.
GOUL, Barbara J.
TITLE OF INVENTION: COMPOINDS AND METHODS FOR REGULATING
CELL ADHESION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GVNPYAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQ 47
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MEDIUM TYPE: Floppy disk

COMPUTER: IBM PC compatible

OPERATING SYSTEM: PC-DOS/MS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/10/648,854

FILING DATE: 25-Aug-2003

CLASSIFICATION: VINKOWN>
ATTORNEY, AGENT INFORMATION:

NAME: Jeffrey B. Hundley

REGISTRATION NUMBER: 42,676

REFERENCE/DOCKET NUMBER: 100086.402C2

TELEPHONE: (206) 622-4900

TELEPRAX: (206) 622-4900
                                                                                                                                                                                                                                                                                                                                              Length 47;
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                REGISTRATION NUMBER: 32,391
REFERENCE/DOCKET NUMBER: 100086.402
FELECOMMUNICATION HYDRAMATION:
TELEPHONE: (206) 622-4900
TELEFAX: (206) 682-6031
SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
TYPE: allocation
SEQUENCE DESCRIPTION: SEQ ID NO: 15:
US-09-778-026-15
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Pred. No. 3.7e-26;
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ADDRESSE: Seed IP Law Group FLLC
STREET: 701 Fifth Avenue, Suite 6300
CITY: Seattle
STATE: Washington
COUNTRY: USA
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Best Local Similarity 97.9%; Pred. No. 3.7e
Matches 46; Conservative 0; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
LENGTH: 47 amino acids
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NAME: Maki, David J.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-10-648-854-15
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Search completed: April 1, 2005, 10:03:20 Job time : 137.553 secs

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DESCRIPTION: polypeptide
PRAGMENT TYPE: complete sequence
FEATURE:
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1 GVNPTAQSSGSLYGSQIYAL......LYVDQYLYHYCVVDPQEAIA 51
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565.610 Million cell updates/sec
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                                                                                                                                  April 1, 2005, 09:16:13 ; Search time 6.73096 Seconds
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/cgn2_6/ptodata/1/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/1/iaa/PcTUS_COMB.pep:*
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                    GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd
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US-09-248-074-78
US-09-248-074-78
US-09-458-870-78
US-09-351-048A-69
US-09-351-048A-69
US-09-351-048A-69
US-09-351-048A-69
US-09-351-048A-69
US-09-351-048A-69
US-09-3542B-62
US-09-95-826-6
US-08-945-826-6
US-08-939-853A-15
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S-09-222-373-5
S-08-996-679-59
S-09-001-511-5
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3-09-222-373-6
3-09-001-511-6
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                                                                                                                                                                                                                                                                                                                                                            513545 segs, 74649064 residues
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Maximum Match 100%
Listing first 45 summaries
                                                                                               OM protein - protein search, using sw model
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 200000000
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Match Length DB
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Perfect score:
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Description of 622045

Description (1971-172-2)

TITLE OF INVENTION: Human Occludin, Its Uses and TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors (1971-172-2)

DESCRIPTION: Human Occludin, Its Uses and TITLE OF INVENTION: Enhancement of Drug Absorption Using Occludin Inhibitors (1971-172-2)

DESCRIPTION: ADDRESSE: Section of Digestive Diseases ADDRESSE: Department of Internal Medicine STREET: 313 Cedar Street, ICI 105

CURNEY: United Street (ICI 105

COMPUTER: RADABLE FORM:

MEDIUM TYPE: 31-31-44 Mb diskette

COMPUTER: 11-44 Mb diskette

COMPUTER: 11-44
                                                                                                                         46, Appli
8, Appli
8, Appli
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60597, A
45097, A
2, Appli
60, Appli
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2, Appli
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Sequence 8, A
Sequence 8, A
Sequence 8, A
Sequence 6059
Sequence 2, A
Sequence 2, A
Sequence 2, A
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US-09-450-073-7
US-09-222-373-46
US-09-510-616-46
US-09-510-616-46
US-09-222-373-8
US-09-510-616-8
US-09-510-616-8
US-09-510-616-8
US-09-510-616-8
US-09-510-616-8
US-09-270-767-45097
US-09-270-767-45097
US-09-237-373-2
US-08-939-853A-17
US-09-001-511-2
US-09-234-541-12
US-09-282-029A-478
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TOPOLOGY: linear
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196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
TITLE OP INVENTION: COMPOUNDS AND METHODS FOR MODULATING TISSUE
TITLE OF INVENTION: PERMEABILITY
FILE REFERENCE: 100086,405C1
CURRENT APPLICATION NUMBER: US/09/222,373
CURRENT FILING DATE: 1998-12-29
EARLIER APPLICATION NUMBER: US 09/001,511
EARLIER FILING DATE: 1997-12-31
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              100.0%; Score 275; DB 4; Length 522; 100.0%; Pred. No. 4.2e-29;
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     ZIP: 22040-0147
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
COMPUTER: DEP PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/197,503
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 95.6%; Score 263; DB 3; I
Best Local Similarity 100.0%; Pred. No. 8.8e-29;
Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                      PILING DAIE:
CLASSIFICATION DATA:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/945,826
FILING DATE: 05-NOV-1997
ATTORNSY/AGENT INFORMATION:
NAME: FARACI, C. JOSEPH
REGISTRATION NUMBER: 32,350
REFERENCE/DOCKET NUMBER: 0425-0660P
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELEFAX: (703) 205-8000
TELEFAX: (703) 205-8000
TELEFAX: (703) 205-8000
TELEFAX: 525-8010 NO: 2: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                               0425-0660P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 5
US-08-996-679-59
; Sequence 59, Application US/08996679
; Patent No. 6169071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 4
US-09-222-373-5
Sequence 5, Application US/09222373
Patent No. 6110747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NUMBER OF SEQ ID NOS: 52
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.0
Matches 51; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   , MOLECULE TYPE: protein US-09-197-503-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TOPOLOGY:
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                                                                                                                                                                                                                                      196 GVNPTAQSSGSLYGSQIYALCNOFYTPAATGLYVDOYLYHYCVVDPOEAIA 246
                                                                                                                                                                                       1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 51
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                                                                                   Length 522;
                                                                                                                                                                                                                                                                                                                                                     Sequence 2, Application US/08945826
; Sequence 2, Application US/08945826
; Patent No. 648946
; GENERAL INFORMATION:
   APPLICANT TSUKITA, Shoichiro
   TITLE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
   NUMBER OF SEQUENCES: 8
; CORRESPONDENCE ADDRESS:
   ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
   CITY: Falls Church
   STREET: P.O. Box 747
   CITY: Falls Church
   STREET: P.O. Box 747
   CONFUTER READALE FORM:
   MEDIUM TYPE: Floppy disk
   CONFUTER READALE FORM:
   MEDIUM TYPE: Floppy disk
   COMPUTER: IBM PC Compatible
   OPERATING SYSTEM: PC-DOS/MS-DOS
   SOFTWARE: PatentIn Release #1.0, Version #1.30
   CURRENT APPLICATION NOTA:
   APPLICATION NUMBER: US/08/945,826
   FILING DATE: 05-NOV-1997
   CLASSIFTATION: S36
   ATTORNEY/AGENT INFORMATION:
   NAME: FARACI, C. Joseph
   REFERENCE/DOCKET NUMBER: 0425-0660P
   TELECOMMUNICATION INFORMATION:
   TELECOMMUNICATION INFORMATION:
   TELECOMMUNICATION INFORMATION:
   TELECOMMUNICATION INFORMATION:
   TELEFAX: (703) 205-8050
   INFORMATION FOR SEQ ID NO: 2:
   SEQUENCE CHARACTERISTICS:
   LEDNITH FOR SEQ ID NO: 2:
   SEQUENCE CHARACTERISTICS:
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Sequence 2, Application US/09197503

Batent No. 6559286

GENERAL INFORMATION:
APPLICANT: TSUKITA, Shoichiro
ITILE OF INVENTION: HUMAN ADHESION MOLECULE OCCLUDIN
NUMBER OF SEQUENCES:
GORRESPONDENCE ADDRESS:
ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
STREET: P.O. Box 747

CITY: Falls Church
                                                                             Query Match
100.0%; Score 275; DB 3;
Best Local Similarity 100.0%; Pred. No. 4.2e-29;
Matches 51; Conservative 0; Mismatches 0;
  human occludin
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amino acid
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NAME/KEY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TOPOLOGY:
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US-08-945-826-2
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US-09-197-503-2
     ; NAME/KEY
US-09-142-732-2
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Gaps

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ATTORNEY, MAKI, David J.

NAME: MAKI, David J.

REGISTRATION NUMBER: 31,392

REFERENCE/DOCKET NUMBER: 10008

TELECOMMUNICATION INFORMATION:

TELEPHONE: (206) 682-6931

INPORMATION FOR ESC ID NO: 5:

SEQUENCE CHARACTERISTICS:

LENGTH: 48 amino acids

TYPE: amino acid

STRANDEDNESS: single

COLOGY: linear

US-09-001-511-5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Artificial Sequence
                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 100.
Matches 48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-09-113-977C-69
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APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING
TITLE OF INVENTION: TISSUE PERMEABILITY
NUMBER OF SEQUENCES: 46
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6100 Columbia Center
CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                APPLICANT: Blaschuk, Orest W.

PEPLICANT: Gour, Barbara J.

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING
TITLE OF INVENTION: CELL ADHESION
NUMBER OF SEQUENCES: 63
CORRESPONDENCE ADDRESS:
ADDRESSEE: SEED and BERRY LLP
STREET: 6300 Columbia Center, 701 Fifth Avenue
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GVNPTAQSSGSLYGSQIYALCNQPYTPAATGLYVDQYLYHYCVVDPQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:

MEDIUM TYPE: RIOPY disk

COMPUTER: IRM PC compatible

OPERATING SYSTEM: PC-DOS/NS-DOS

SOFTWARE: Patentin Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/08/996,679

FILING DATE: 23-DEC-1997

CLASSIFICATION:

NAME: Maki, Daivd J.

REFERENCE/DOCKET NUMBER: 100086.401C1

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:

TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: ISM PC compatible
COMPUTER: ISM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/001,511
FILING DATE: 31-DEC-1997
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95.6%; Score 263; DB 3; L
100.0%; Pred. No. 8.8e-29;
tive 0; Mismatches 0;
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Patent No. 6248864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TELEFAX: (206) 682-6031
INPORMATION POR SEQ ID NO: 9
SEQUENCE CHARACTERISTICS:
LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             , MOLECULE TYPE: peptide
US-08-996-679-59
                                                                                                                                                                             STREET: 6300 Columb
CITY: Seattle
STATE: Washington
COUNTRY: USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
GENERAL INFORMATION:
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Sequence 69, Application US/09113977C
; Sequence 69, Application US/09113977C
; Patent No. 6277824
; GENERAL INFORMATION:
; APPLICANT: Doherty, Patrick
; APPLICANT: Blaschuk, Orest W.
; APPLICANT: Blaschuk, Orest W.
; TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
; TITLE OF INVENTION: FUNCTION
; FILE REFERENCE: 100086.403
; CURRENT APPLICATION NUMBER: US/09/113,977C
; CURRENT FILING DATE: 1998-07-10
; NUMBER OF SEQ ID NOS: 87
; SEQ ID NO 69
; LENTH: 48
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                                                     Gaps
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                                                                                                                                                              1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GVNPTAOSSGSLYGSOIYALCNOFYTPAATGLYVDQYLYHYCVVDPQE 48
  Length 48;
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95.6%; Score 263; DB 3; I
100.0%; Pred. No. 8.8e-29;
tive 0; Mismatches 0;
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Best Local Similarity 100.0%; Pred. No. 8.8e-29;
Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
ADDRESSE: SEED IP LAW GROUP PLLC
STREET: 701 Fifth Avenue, Suite 6300
CITY: Seattle
STATE: Washington
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Gaps

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Indels

Length 48;

Score 263; DB 3; I Pred. No. 8.8e-29;

95.6%; Score 263; DE ilarity 100.0%; Pred. No. 8.6 Conservative 0; Mismatches

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APPLICANT: GOUR, BARDARA J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL
TITLE OF INVENTION: CADHERIN-MEDIATED FUNCTIONS
FILE REPREBUCE: 100086.407C1
CURRENT APPLICATION NUMBER: US/09/187,859A
CURRENT FILING DATE: 1998-11-06
NUMBER OF SEQ ID NOS: 4052
SOFTWARE: PATCHIN VEY. 2.0
SEQ ID NO 62
LENGTH: 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                        OTHER INFORMATION: Description of Unknown Organism: CTHER INFORMATION: Adhesion Recognition Sequence US-09-187-859-62
APPLICANT: Blaschuk, Orest W.
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 48; Conserv
                                                                                                                                                                                                                                                               TYPE: PRT
ORGANISM: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 48
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Batent No. 6346512
GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION
FILE REFERENCE: 100086.401C5
CURRENT PAPLICATION NUMBER: US/09/248,074
CURRENT FILING DATE: 1999-02-10
NUMBER OF SEQ ID NOS: 81
SOFTWARE: Patentin Ver. 2.0
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                   ZIP: 98104

COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
                                                                                                                                                             CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/09/510,616
FILING DATE: 22-F9-2000
CLASSIFICATION: <URknown>
ATTORNEY/AGENT INPORMATION:
NAME: Christiansen, William T.
REGISTRATION NUMBER: 44,614
REGISTRATION INPORMATION:
TELECOMUNICATION INPORMATION:
TELECOMUNICATION INPORMATION:
TELEPAX: (206) 682-6031
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
LENGTH: 48 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 95.6%; Score 263; DB 3; I
Best Local Similarity 100.0%; Pred. No. 8.8e-29;
Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRANDEDNESS: single
TOPOLOGY: linear
SEQUENCE DESCRIPTION: SEQ ID NO: 5:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
US-09-187-859-62
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LENGTH: 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
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Patent No. 6472368
GENERAL INFORMATION:
APPLICANT: Doherty, Patrick
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
TITLE OF INVENTION: PUNCTION
FILE REFERENCE: 100006403C1
CURRENT APPLICATION NUMBER: US/09/351,048A
                                                       GENERAL INFORMATION:
GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
APPLICANT: Gour, Barbara J.
APPLICANT: Gour, Barbara J.
APPLICANT: Gour, Barbara J.
APPLICANT: Ali, Annar
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION
TITLE REFERENCE: 100086.40108
CURRENT APPLICATION NUMBER: US/09/458,870
CURRENT PILING DATE: 1999-12-10
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURE: OCCLUDIN DESCRIPTION OF UNKNOWN Organism: Occludin cell OTHER INFORMATION: adhesion recognition sequnce and flanking amino OTHER INFORMATION: acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95.6%; Score 263; DB 4; Length 48; 100.0%; Pred. No. 8.8e-29; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
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US-09-458-870-78; Sequence 78, Application US/09458870; Patent No. 6465427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        48; Conservative
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Matches 48; Conserve
                                                                                                                                                                                                                                                                                                                                                                                                                                  TYPE: PRT
ORGANISM: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 12
US-09-351-048A-69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-09-458-870-78
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Sequence 62, Application US/09187859A Patent No. 6358920 GENERAL INFORMATION:

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Search completed: April 1, 2005, 10:04:45 Job time: 7.73096 secs
     US-09-450-073-5
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Sequence 62. Application US/09839542B

Patent No. 656996

GENERAL INFORMATION:

APPLICANT: Blaschuk, Orest W.

APPLICANT: Symonds, James Matthew

APPLICANT: Symonds, James Matthew

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL

TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL

TITLE OF INVENTION: COMPOUNDS

CURRENT PAPPLICATION NUMBER: US/09/839,542B

CURRENT FILING DATE: 2001-04-20

NUMBER OF SEQ ID NOS: 4052

SOFTWARE: Patentin Ver. 2.0

SEQ ID NO 62

LENGTH: 48
                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                          OTHER INFORMATION: Description of Artificial Sequence: Solid Phase OTHER INFORMATION: Synthesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            OTHER INFORMATION: Description of Unknown Organism: Occludin Cell; OTHER INFORMATION: Adhesion Recognition Sequence US-09-839-5428-62
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Symonds, James Matthew
APPLICANT: Gour, Barbara J.
APPLICANT: Alexander, J. Steven
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR CANCER THERAPY
FILE REFERENCE: 100086.405C2
                                                                                                                                                                                                                                                                                                Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 48;
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Best Local Similarity 100.0%; Pred. No. 8.8e-29;
Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                        Query Match 95.6%; Score 263; DB 4; Best Local Similarity 100.0%; Pred. No. 8.8e-29; Matches 48; Conservative 0; Mismatches 0;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        US-09-450-073-5
; Sequence 5, Application US/09450073
; Patent No. 6797807
CURRENT FILING DATE: 1999-07-09
                                                                                                             TYPE: PRT ORGANISM: Artificial Sequence FEATURE:
                    NUMBER OF SEQ ID NOS: 95
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 69
LENGTH: 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUMBER OF SEQ ID NOS: 52
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 5
LENGTH: 48
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ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM: Unknown
                                                                                                                                                                                                                                             US-09-351-048A-69
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APPLICANT: Doherty, Patrick
APPLICANT: Doherty, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
TITLE OF INVENTION: FUNCTION
FILE REFERENCE: 100086.403C2
CURRENT APPLICATION NUMBER: US/10/193,653
CURRENT PILING DATE: 2002-07-10
SUTMER OF SEQ ID NOS: 95
SOFTWARE: Patentin Ver. 2.0
                                                   Gaps
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     Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ch 95.6%; Score 263; DB 4; Length 48; Similarity 100.0%; Pred. No. 8.8e-29; 48; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   OTHER INFORMATION: Description of Artificial Sequence: OTHER INFORMATION: Synthesis
95.6%; Score 263; DB 4; I 100.0%; Pred. No. 8.8e-29; tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                  Sequence 69, Application US/10193653; Patent No. 6806255; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: PRT
ORGANISM: Artificial Sequence
Query Match 95.6
Best Local Similarity 100.
Matches 48; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 48; Conserva
                                                                                                                                                                                                                                                US-10-193-653-69
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BEST AVAILABLE COPY

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GenCore version 5.1.6
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1, 2005, 09:36:47; Search time 5.43655 Seconds (without alignments) 902.605 Million cell updates/sec April Run on:

US-09-891-064A-2_COPY_196_246 275 1 GVNPTAQSSGSLYGSQIYAL.....LYVDQYLYHYCVVDPQBAIA score: Title: Perfect so Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 segs, 96216763 residues Searched:

Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

PIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

## SUMMARIES

		de			SOLUMNISS	
Result No.	Score	Query Match	Query Match Length	DB	ID	Description
-	275	100.0	522	10	G02533	occludin - human
7	144	52.4		~	A49467	ı
m	9	21.8	533	~	D87556	ica
4	58	21.1		П	CCQF2M	cytochrome c2, iso
2	58	21.1		~	AD1795	. <u>"</u>
9	57.5	20.9		~	A72228	
7	57	20.7	379	~	AF2409	mannosyl transfera
80	57	20.7		~	AC2200	potassium-transpor
0	56.5	20.5		٦	JQ1886	coat protein - tom
10	26	20.4		٦	INTWS	insulin - sea lamp
11	26	20.4			B48640	
12	26	20.4		0	AH2354	nitrogen-responsiv
13	26	20.4	331	7	. AF1349	tryptophanyl-tRNA
14	99	20.4		~	AI1719	tryptophanyl-tRNA
15	26	20.4		~	T46464	hypothetical prote
16	55.5	20.2	987	~	D97029	ribonucleotide red
17	55	20.0		Н	A48640	global nitrogen re
18	55	20.0		N	B82415	probable serine pr
19	52	20.0		Н	VCXFTI	
20	55	20.0		Н	VCXFSI	major capsid prote
21	52	20.0	557	~	A57050	K-glypican precurs
22	52	20.0		N	F81721	polymorphic membra
23	55	20.0	947	7	H84866	hypothetical prote
24	54.5	19.8	303	~	T42699	
25	54.5	19.8	2825	~	T14271	
56	54	19.6	324	~	S62543	hypothetical prote
27	54		378	~	S76183	
28	54	19.6	588	N	T26193	_
29	54	19.6	590	~	T06626	

xanthine dehydroge	hypothetical prote	hypothetical prote	L, D-carboxyprptid	L, D-carboxyprptid	Muramoyltetrapepti	probable PPE prote	probable PPE prote	translation releas	translation releas	putrescine/ornithi	hypothetical prote	probable metabolit	steroid/thyroid/re	ribonucleotide red	hypothetical prote
F83456	S64142	B90294	G90839	G85697	E64865	B70608	H70741	A48061	550853	T44519	T29791	T39345	T34121	T41930	H90638
N	~	~	7	N	N	N	N	Н	Н	~	N	~	N	~	7
799	1403	613	304	304	304	391	396	437	437	455	497	543	583	908	314
19.6	19.6	19.5	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.1
54	54	53.5	53	53	53	53	53	53	53	53	53	53	23	23	52.5
30	31	32	33	34	32	36	37	38	39	40	41	42	43	44	45

# ALIGNMENTS

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G02533

G02533

Cccludin - human

C;Species: Homo sapiens (man)

C;Accession: G02533

K;Van Itallie, C.M.

submitted to the EMBL Data Library, April 1996

A;Reference number: H01403

A;Reference number: H01403

A;Accession: G02533

A;Accession: G02533

A;Molecule type: mRNA

A;Molecule type: mRNA

A;Residues: 1-522 <VAN>

A;Coss-references: UNIPROT:Q16625; EMBL:U53823; NID:g1322281; PIDN:AAB00195.1; PID:g137

C;Superfamily: occludin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
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                                                                                                                                                                                                                                                                                                                                                                                                              Length 522;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
100.0%; Score 275; DB 2;
Best Local Similarity 100.0%; Pred. No. 1.2e-26;
Matches 51; Conservative 0; Mismatches 0;
RESULT 1
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		OV 1 GVNPTAOSSGSLYGSOLYALCNOFYTPAATGLYVDOYLYHYCVVDPOEALA 51
TI OI	Description	
1		Db 196 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIA 246
G02533	occludin - human	
A49467	occludin - chicken	
D87556	hypothetical prote	RESULT 2
CCQF2M	cytochrome c2, iso	A49467
AD1795	xylose operon regu	occludin - chicken
A72228	hypothetical prote	C;Species: Gallus gallus (chicken)
AF2409	mannosyl transfera	C;Date: 03-May-1994 #sequence revision 03-May-1994 #text_change 09-Jul-2004
AC2200	potassium-transpor	C; Accession: A49467
JQ1886	coat protein - tom	R; Furuse, M.; Hirase, T.; Itoh, M.; Nagafuchi, A.; Yonemura, S.; Tsukita, S.; Tsukita, E
INLMS	insulin - sea lamp	J. Cell Biol. 123, 1777-1788, 1993
B48640	regulatory protein	A; Title: Occludin: a novel integral membrane protein localizing at tight junctions.
AH2354	nitrogen-responsiv	A; Reference number: A49467; MUID: 94103332; PMID: 8276896
AF1349	tryptophanyl-tRNA	A;Accession: A49467
AI1719	tryptophanyl-tRNA	A;Status: preliminary
T46464	hypothetical prote	A;Molecule type: mRNA
D97029	ribonucleotide red	A;Residues: 1-504 <fur></fur>
A48640	global nitrogen re	A; Cross-references: UNIPROT: Q91049; GB: D21837; NID: g464148; PIDN: BAA04865.1; PID: g540494
B82415	probable serine pr	C; Superfamily: occludin
VCXFTI	major capsid prote	C; Keywords: liver; membrane protein
VCXFSI	major capsid prote	
A57050	K-glypican precurs	Query Match 52.4%; Score 144; DB 2; Length 504;
F81721	polymorphic membra	Similarity 52.9%;
H84866	hypothetical prote	Matches 27; Conservative 7; Mismatches 13; Indels 4; Gaps 1;
T42699	hypothetical prote	
T14271	Doc4 protein, stre	Qy 1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIA 51
S62543	hypothetical prote	
S76183	hypothetical prote	Db 184 GVNPQAQMSSGYYYSPLLAMCSQAYGSTYLNQYIYHYCTVDPQEAVA 230
T26193	hypothetical prote	

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A;Cross-references: UNIPROT:Q926Y3; GB:AL592022; PIDN:CAC98132.1; PID:g16415448; GSPDB:GA;Experimental source: strain Clip11262
A;Gentelics:
A;Gentelics:
C;Superfamily: glucose kinase; glucose kinase homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    score 57; DB 2; Pred. No. 20; 7; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Gene: al14830
C;Superfamily: hypothetical protein sll1534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9
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Best Local Similarity 38.9%;
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  19; Conservative
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                                              A; Molecule type: DNA
A; Residues: 1-294 <GLA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-553 <ARN>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Status: preliminary
preliminary
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C; Species: Rhodospirillum molischianum
C; Accession: A00079
R; Amblar, R.P.; Meyer, T.B.; Bartsch, R.G.; Kamen, M.D.
unpublished results, cited by Ambler, R.P.; in Evolution of Protein Molecules, Matsubara an, Tokyo, 197
A; Reference number: A94458
A; Accession: A00079
A; Molecule type: protein
A; Residues: 1-100 AMB>
A; Accession: Anonopy and Amblar, Residues: 1-100 AMB>
A; Cross-references: UNIPROT: P00087
C; Superfamily: cytochrome c; cytochrome c homology
C; Superfamily: cytochrome c; cytochrome c homology C; Keywords: chromoprotein; electron transfer; heme; iron; metalloprotein; photosynthesis
F; 1-96/Domain: cytochrome c homology CCC>
F; 11, 14/Binding site: heme (Cys) (covalent) #status predicted
F; 15, 76/Binding site: heme iron (His, Met) (axial ligands) #status predicted
                                                                                                                   Cippencial production of the control of the control
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AVIORE OPERON regulatory protein and to glucose kinase homolog lin2907 [imported] - List Cylosecies: Listeria innocua argument of glucose kinase homolog lin2907 [imported] - List Cylose: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Jul-2004 Cylosesion: AD1795 Gyloser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bloecker, J. Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; Fshin, H. Science 294, 849-852, 2001
A.Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, A.; Maok, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland, A.; Reference number: AB1077; MUID:21537279; PMID:11679669
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GVNPTAQSSGSLYGSQIYALCNQFYTPA--ATGLYVDQYLYHYCVVDPQEAI 50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4 PTAQSSGSLYGSQIYALCNQFYTPAATGLY----VDQYLYHYCVVDPQEAIA 51
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                                                                                        hypothetical protein CC2477 [imported] - Caulobacter crescentus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 21.8%; Score 60; DB 2; Length 533; Best Local Similarity 32.7%; Pred. No. 12; Matches 17; Conservative 7; Mismatches 24; Indels
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Best Local S:
Matches 15,
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C;Species: Thermotoga maritima
C;Date: 11-Jun-1999 #sequence_revision 11-Jun-1999 #text_change 09-Jul-2004
C;Accession: A72228
R;Nelson, K.E.; Clayton, R.A.; Gill, S.R.; Gwinn, M.L.; Dodson, R.J.; Haft, D.H.; Hickey
Garrett, M.M.; Stewart, A.M.; Cotton, M.D.; Pratt, M.S.; Phillips, C.A.; Richardson, D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 399, 323-329, 1999
Ajitle: Evidence for lateral gene transfer between Archaea and Bacteria from genome seq.
AjReference number: A72200; MUID:99287316; PMID:10360571
AjAccession: A72228
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Cross-references: UNIPROT:Q9X1Y5; GB:AE001807; GB:AE000512; NID:g4982216; PIDN:AAD3671
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mannosyl transferase [imported] - Nostoc sp. (strain PCC 7120)
C;Species: Nostoc sp. PCC 7120
C;Species: Nostoc sp. PCC 7120
A;Note: Nostoc sp. strain PCC 7120
A;Note: Nostoc sp. strain PCC 7120
A;Note: Nostoc sp. strain PCC 7120
A;Note: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
C;Accession: AF2409
B;Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Watanabe, A.; Iriguchi, Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S. DNA Res. 8, 205-213, 2001
A;Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Ana A;Reference number: AB1807; MUID:21595285; PMID:11759840
A;Accession: AF2409
A;Accession: AF2409
A;Accession: DNA
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                                                             3;
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                                                                 Gaps
                                                                                                                        6 AQSSG----SLYGSQIYA-----LCNQFYTPAATGLYVDQYLYHYCVVDP 46
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21.1%; Score 58; DB 2; Length 294; 33.9%; Pred. No. 11;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                     hypothetical protein - Thermotoga maritima (strain MSB8)
                                                             11;
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Pred. No. 26;
6; Mismatches
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                                                                                                                                                                                                                                                                                                                                                                                                                                                           potassium-transporting ATPase A chain all3154 [imported] - Nostoc sp. (strain PCC 7120) C;Species: Nostoc sp. PCC 7120 C;Species: Nostoc sp. pCC 7120 is a synonym of Anabaena sp. strain PCC 7120 C;Date: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004 C;Accession: AC2200
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C;Species: tomato yellow leaf curl virus
C;Species: tomato yellow leaf curl virus
C;Date: 17-Feb-1994 #sequence_revision 17-Feb-1994 #text_change 09-Jul-2004
C;Date: 17-Feb-1994 #sequence_revision 17-Feb-1994 #text_change 09-Jul-2004
C;Date: 17-Feb-1994 #sequence_revision 17-Feb-1994 #text_change 09-Jul-2004
C;Date: 18.; Rigden, J.E.; Krake, L.R.; Mullineaux, P.M.; Rezaian, M.A.
J. Gen, Virol. 74, 147-151, 1993
A;Title: Nucleotide sequence and genome organization of tomato leaf curl geminivirus.
A;Reference number: JQ1885; MUID: 93139778; PMID: 8423446
A;Reterence number: JQ1885; MUID: 93139778; PMID: 8423446
A;Reterence number: JQ1886
A;Reterence num
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C;Species: Petromyzon marinus (sea lamprey)
C;Species: 31-bec-1991 #sequence_revision 31-bec-1991 #text_change 09-Jul-2004
C;Accession: S06318; 806870
R;Plisetskaya, E.M.; Pollock, H.G.; Elliott, W.M.; Youson, J.H.; Andrews, P.C. Gen. Comp. Endocrinol. 69, 46-55, 1988
A;Title: Isolation and structure of lamprey (Petromyzon marinus) insulin.
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Pred. No. 15;
9; Mismatches 12; Indels 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 579,
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                                                                       3 YALVHEWLIPKATGGSELVVKEILHHVDADLYALID 38
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 20.7%; Score 57; DB 2;
Best Local Similarity 54.5%; Pred. No. 31;
Matches 12; Conservative 3; Mismatches 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A,Gene: all3154
C,Superfamily: H+/K+-exchanging ATPase subunit A
    YALCNOFYTPAATG---LYVDQYLYH-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |||||::|
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| YGSQMFGLGYHMFTSAATGLAV 150
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Best Local Similarity 28.9%;
Matches 13; Conservative
18
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A,Cross-references: UNIPROT:Q05061; EMBL:X71608; NID:g296875; PIDN:CAA50608.1; PID:g2968
R;Wei, T.F.; Ramasubramanian, T.S.; Pu, F.; Golden, J.W.
Bacteriol. 175, 4025-4035, 1993
A;Title: Anabaena pp. strain PCC 7120 bifA gene encoding a sequence-specific DNA-binding A;Reference number: A40653; MUID:93308081; PMID:8391534
A;Accession: A40653
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C;Superfamily: regulatory protein fnr, cAMP receptor protein cyclic nucleotide-binding d
C;Keywords: DNA binding; transcription regulation
F;176-195/Region: helix-turn-helix crp-type motif
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nitrogen-responsive regulatory protein ntcA [imported] - Nostoc sp. (strain PCC 7120)
C; Species: Nostoc sp. PCC 7120
A; Note: Nostoc sp. strain PCC 7120
C; Species: 14-Dec-2001 #sequence_revision 14-Dec-2001 #text_change 09-Jul-2004
C; Accession: A42354
R; Kaneko, T.; Nakamura, Y.; Wolk, C.P.; Kuritz, T.; Sasamoto, S.; Matanabe, A.; Iriguchi Nakazaki, N.; Shimpo, S.; Sugimoto, M.; Takazawa, M.; Yamada, M.; Yasuda, M.; Tabata, S DNA Res. 8, 205-213, 2001
A; Title: Complete Genomic Sequence of the Filamentous Nitrogen-fixing Cyanobacterium Ana A; Reference number: AB1807; MUID:21595285; PMID:11759840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               regulatory protein ntcA - Anabaena sp. (strain PCC 7120)
NiAlternate names: regulatory protein bifA
C;Species: Anabaena sp.
C;Species: Anabaena sp.
C;Accesion: B48640; A40653; S32665
R;Frias, J.E.; Merida, A.; Herrero, A.; Martin-Nieto, J.; Flores, B.
J. Bacteriol. 175, 5710-5713, 1993
A;Title: General distribution of the nitrogen control gene ntcA in cyanobacteria.
A;Reference number: A48640; MUID:93374871; PMID:8366058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GSHLVEALYVVCGDRGFFYTPSKTGI-VEQCCHRKCSIYDME 53
A;Reference number: S06338; MUID:88196804; PMID:3282977
A;Accession: S06338
A;Molecule type: protein
A;Residues: 1-36;37-57
A;Cross-references: UNIPROT:P14806
C;Superfamily: insulin
C;Superfamily: insulin
C;Keywords: horrones; pancreas
F;1-36/Domain: insulin chain B #status experimental <BCH>F;1-36/Domain: insulin chain B #status experimental <ACH>F;37-57/Domain: insulin chain A #status experimental <ACH>F;37-57/Domain: insulin chain A #status predicted
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                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
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                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 20.4%; Score 56; DB Sest Local Similarity 33.3%; Pred. No. 3.6; Matches 14; Conservative 7; Mismatches
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Pred. No.
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Best Local Similarity 33.3
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: DNA
A; Residues: 1-223 <FRI>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .223 <WEI>
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Status: preliminary A;Molecule type: DNA
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16;

Length 331;

.; ? DB :

9; Mismatches Score 56; Pred. No.

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1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVD-
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               A;Gene: trpS
C;Superfamily: tryptophan-tRNA ligase
                                                                                                                                                 ch 20.4%;
1 Similarity 32.1%;
18; Conservative 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A Status: preliminary
A Molecule type: mRNA
A, Residues: 1-542 <AAA>
                                                                                                                                                                                                    Best Local Similarity
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                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                           Matches
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T46464
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C;Species: Listeria innocua
C;Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Jul-2004
C;Accession: Al1719
R;Glaser, P.; Frangeul, L.; Buchrieser, C.; Amend, A.; Baquero, F.; Berche, P.; Bloecker.
D; Jonnes, L.M.; Karset, U.
Science 294, 849-852, 2001
A;Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitournam, A.; Maok, C.; Schlueter, T.; Simoses, N.; Titerrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland, A;Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
A;Scassion: Al1719
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-331 <GLA>
A;Residues: 1-331 <GLA>
A;Residues: 1-331 <GLA>
A;Residues: Listeria Guiro: Strain Clip11262
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C;Species: Listeria monocytogenee
C;Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Jul-2004
C;Species: Listeria monocytogenee
C;Date: 27-Nov-2001 #sequence_revision 27-Nov-2001 #text_change 09-Jul-2004
C;Gaser, P.; Frangeul, L.; Buchrieser, C; Amend, A.; Baquero, F.; Berche, P.; Bloecker
C; Dominguez-Bernal, G.; Duchaud, E.; Durand, L.; Dussurget, O.; Entian, K.D.; Fsihi, H.
D; Jones, L.M.; Karet, U.
Schaueter, Kreft, U.
Schueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland, A;Authors: Kreft, J.; Kuhn, M.; Kunst, F.; Kurapkat, G.; Madueno, E.; Maitcournam, A.; Ma ok, C.; Schlueter, T.; Simoes, N.; Tierrez, A.; Vazquez-Boland, J.A.; Voss, H.; Wehland, A;Title: Comparative genomics of Listeria species.
A;Reference number: AB1077; MUID:21537279; PMID:11679669
A;Accession: AF1349
A;Molecule type: DNA
A;Residues: 1-331 cGLA>
A;Cross-references: UNIPROT:Q8Y577; GB:NC_003210; PIDN:CAD00276.1; PID:g16411668; GSPDB:A;Experimental source: strain EGD-e
C;Genetics:
A;Gene: trpS
C;Superfamily: tryptophan-tRNA ligase
A;Accession: AH2354
A;Status: preliminary
A;Status: preliminary
A;Status: preliminary
A;Status: Dreliminary
A;Status: 1-223 «KUR>
A;Cross-references: UNIPROT;Q05061; GB:BA000019; PIDN:BAB76091.1; PID:g17133528; GSPDB:G
A;Experimental source: strain PCC 7120
C;Genetics:
A;Genetics:

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Matches
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hypothetical protein DKF2p434P072.1 - human
C;Species: Homo sapiens (man)
C;Date: 04-Feb-2000 #sequence_revision 04-Feb-2000 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
8
                                                                                                                                                                                                                          C;Accession: T46464
R;Ansorge, W.; Wirkner, U.; Mewes, H.W.; Gassenhuber, J.; Wiemann, Bubmitted to the Protein Sequence Database, January 2000
A;Reference number: Z23028
A;Accession: T46464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ch 20.4%; Score 56; DB 2; Length 542; ll Similarity 37.0%; Pred. No. 39; 17; Conservative 5; Mismatches 16: Indele
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3 NPTAQSSGSLY----GSQIYALCNQFYTPAATGLYVD---QYLYH 40
                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: UNIPROT:Q9NTB1; EMBL:AL137421
A;Experimental source: adult testis; clone DKFZp434P072
C;Genetics:
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Best Local Similarity
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April 1, 2005, 09:16:14 ; Search time 261.168 Seconds (without alignments) 725.636 Million cell updates/sec
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2590
1 MHVRPMLSQPAYSFYPEDBI......LKSKLSHIKKAVVGDYDRQKT 490
GenCore version 5.1.6
(c) 1993 - 2005 Compugen Ltd.
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                Copyright
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Perfect score:
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2105692 Total number of hits satisfying chosen parameters: 2105692 seqs, 386760381 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table: Sequence: Searched:

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Minimum DB seq length: 0 Maximum DB seq length: 200000000

genescqp1980s:* genescqp2000s:* genescqp2001s:* genescqp2001s:* genescqp2003ss:* genescqp2003bs:* genescqp2003bs:* A_Geneseq_16Dec04:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Aaw36052 Human occ	Aaw34638 Human occ	Aab35731 Human occ	Abj37076 Human bre		Adi47189 Human occ	Abm84985 Human dia	Abm84986 Human dia	Aaw36054 Mouse occ	Aaw36053 Canine oc	Add46543 Rat Prote	Aaw76214 Human occ	Abr58441 Human NOV	П			Aau11278 Human rec	Aay17159 Peptide S	-	Aay78216 Occludin	Aay64642 Occludin	Aag65438 Occludin	Abu60314 Mammalian	Abo43607 Classical
ΩΙ	AAW36052	AAW34638	AAB35731	ABJ37076	ADD46545	AD147189	ABM84985	ABM84986	AAW36054	AAW36053	ADD46543	AAW76214	ABR58441	AD121141	AAG74111	AAU11279	AAU11278	AAY17159	AAY96005	AAY78216	AAY64642	AAG65438	ABU60314	AB043607
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% Query Match Length	522	522	522	522	522	522	508	208	521	505	523	108	561	558	91	594	475	48	48	48	48	48	48	48
% Query Match	100.0	100.0	100.0	100.0	100.0	100.0	96.4	96.4	90.2	90.0	89.7	21.9	11.2	11.1	11.0	10.8	10.6	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Score	2590	2590	2590	2590	2590	2590	2498	2498	2335.5	2330.5	2323.5	266	291	287.5	285	280.5	275.5	263	263	263	263	263	263	263
Result No.	п	7	e	4	S	9	7	80	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

Adk13612 Cadherin-	Ado70598 Occludin	Adp07175 Cell adhe	Adr74398 Human occ	Aay09102 Cell adhe	Aay96006 Mouse occ	Adr74399 Mouse occ	Aay96007 Dog occlu	Adr74400 Dog occlu	Aaw76213 Human ELL	Abg19597 Novel hum	Aay96009 Mammalian	Aaw76212 Human ELL	Aab57048 Human pro	Human	Abp69416 Human pol	Human	Adn06048 Antipsori	Adp56404 Human PRO	Abg14568 Novel hum
ADK13612	AD070598	ADP07175	ADR74398	AAY09102	AAY96006	ADR74399	AAY96007	ADR74400	AAW76213	ABG19597	AAY96009	AAW76212	AAB57048	AAG89128	ABP69416	ADL83175	ADN06048	ADP56404	ABG14568
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263	263	263	263	251	243	243	232	232	229.5	229.5	221.5	219	219	165	165	165	165	165	156.5
56	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

# ALIGNMENTS

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DNA encoding human, dog and mouse occludin(s) - useful for screening for substances influencing occluding expression.
                                                                           Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.
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              AAW36052 standard; protein; 522
                                                            Human occludin protein sequence.
                                                                                                                                                        97WO-JP000665.
                                                                                                                                                                        96JP-00049880.
96JP-00331944.
                                             (first entry)
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                                                                                                                                                                                                                                     N-PSDB; AAT97972.
                                                                                                                                                                                               (EISA ) EISAI
                                                                                                           Homo sapiens.
                                                                                                                          WO9732982-A1.
                                                                                                                                                       05-MAR-1997;
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12-DEC-1996;
                                             25-MAR-1998
                                                                                                                                         12-SEP-1997.
                                                                                                                                                                                                             Tsukita S;
                              AAW36052;
RESULT 1
         AAW36052
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Claim 1; Page 15-17; 36pp; Japanese.

The present sequence represents human occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. Antibodies raised against the protein are used to assay for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent call-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin expression. Therapeutic polynucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the bloodbrain barrier. Primers that hybridise to the occludin DNA sequence can be used to detect occludin DNA by PCR

Abw01277 Occludin

7 ABW01277

48

10.2

263

25

English

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This protein comprises human occludin, an integral transmembrane protein specifically associated with tight junctions that functions in forming intercellular seals. Its amino acid sequence was deduced from overlapping cDNA clones (see AAT93752) obtained from a human liver cDNA library. Occludin can be used to reduce tissue permeability. Occludin inhibitors can be used to enhance delivery of drugs (or gene therapy vectors) by increasing absorption across endothelial or epithelial barriers, is transmucosal or transvacular drug delivery. Inhibitors include occludin surface loop peptides that inhibit adhesion and/or barrier properties, or antibodies that intercat with occludin coccludin receptors. Methods are claimed for identifying occludin inhibitors and for screening for the presence or absence of occludin inhibition in a sample
                                                                                       Isolated human occludin protein - useful for increasing drug delivery across endothelial or epithelial barriers, or for reducing tissue permeability.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB35731 standard; protein; 522 AA.
                                    Van Itallie CM;
                                                                                                                                                      Claim 2; Page 31-32; 49pp;
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Best Local Similarity 100.
Matches 490; Conservative
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                                                                          N-PSDB; AAT93752
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                      100.0%; Score 2590; DB 2; Length 522; 100.0%; Pred. No. 7e-216; ive 0; Mismatches 0; Indels 0
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/label= Extracellular loop
/note= "inhibitor peptide (Claim 9)"
196. .246
/label= Extracellular loop
/note= "inhibitor peptide (Claim 10)
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Matches 490;
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100.0%; Score 2590; DB 2;
100.0%; Pred. No. 7e-216;
tive 0; Mismatches 0;
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INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480
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    213 YALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                  RYDKSNILMDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN
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100.0%; Pred. No. 7e-216;
ive 0; Mismatches 0;
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27-JUN-2001; 2001US-0301351P.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      This invention relates to a pharmaceutical composition used for gene therapy, comprising a nucleic acid encoding a therapeutic gene and a promoter, a transfection vehicle and an agent to disrupt the function of the junctional complex in the cells. The pharmaceutical composition has cytostatic, cardiant, vasotropic, antiinflammatory and antilipaemic activity. The pharmaceutical composition is useful for gene therapy and for enhancing efficiency of gene delivery to cells. The composition is useful for gene therapy of cystic fibrosis, inflammatory or fibroic lung diseases, peripheral vascular disease, coronary arterial diseases, restenosis, hypercholesterolaemia and cancer. The present sequence represents the human occludin protein. Occludin is used in the invention to determine the effect of the junctional inhibitors used in the
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                                                                                                            Pharmaceutical composition; gene therapy; junctional complex disruption; cytostatic; cardiant; vasotropic; antiinflammatory; antilipaemic; cytostatic; inflammatory disease; fibrotic lung disease; peripheral vascular disease; coronary arterial disease; restenosis; hypercholesterolaemia; cancer; human; occludin.
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100.0%; Pred. No. 7e-216;
tive 0; Mismatches 0
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                                                                         Human occludin amino acid sequence.
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99GB-00009073.
99GB-0009297.
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(UYNC-) UNIV NORTH CAROLINA.
                                  (first entry)
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1es 490; Conservative
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20-APR-1999;
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13-SEP-1999;
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AAB35731;
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        MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG
                                                                                                                                                                                          INKELSRLDKELDDYREESEEYWAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK
                             YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA
                                      YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA
                                                           LVIPVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI
                                                                  YALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                                       213 YALCNOFYTPAATGLYVDOYLYHYCVVDPOEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                                                       RYDKSNILWDKEHIYDEOPPNVEEWVKNVSAGTODVPSPPSDYVERVDSPMAYSSNGKVN
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01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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                                                                                                                                                                                                                                                                                                                                 (revised)
(first entry)
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(FARB ) BAYER AG.
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GENBANK; NP_002529.
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Unidentified.
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29-JAN-2004
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The invention discloses a composition comprising two or more isolated rate or human polynuclectides or a polynuclectide which represents a fragment, derivative or allelic variation of the nucleic acid sequence. Also claimed are a vector comprising the movel polynuclectide, a host cell comprising the vector, a method for identifying a nuclectide sequence which is differentially regulated in an animal subjected to pain and a chart is differentially expressed in neuronal tissue of a first animal cubjected to pain, a method for identifying a compound which regulates the expression of a polynucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound which regulates the activity of one or more of the compound that regulates the activity of one or more of the composition, a compound that regulates the activity of one or more of the composition, a method for identifying a compound useful in treating compound to a method for identifying a compound useful in treating continity in an animal of one or more of the polypeptides given in the specification, a method for identifying a compound useful in treating compulates its activity is useful for preparing a medicament for treating condulates its activity is useful for preparing a medicament for treating condulates its activity is useful for preparing a medicament for treating condulates its activity is useful for preparing a medicament for treating condulates its activity is useful for preparing a medicament for treating confinury (CCI) and spared nerve injury (SNI) in an animal (e.g. spane there specification) which is differentially expressed during pain.

Che specification, but was obtained in electronic form directly from WIPO at the wipo.int/pub/published_pot_equences.
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New composition comprising two or more isolated polypeptides, useful for preparing a medicament for treating pain in an animal.
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                                                                                                        Example 1; Page; 1017pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 522 AA;
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The invention relates to novel diagnostic and therapeutic polynucleotides selected from one of the 2722 sequences defined in the specification. A polynucleotide of the invention may have a use in gene therapy. The human diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be used to diagnose a particular condition, disease or disorder associated
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  213 YALCNQFYTPAATGLYVDQYLYHYCVVDPQBAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                     273 RYDKSNILMDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN
                                                                                                                                                                                                                                                    TEQUHYETDYTTGGESCOELEEDHIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE
                                                                                                                                                                                                                                                                                                                                   453 INKELSRLDKELDDYREESEEYWAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK
                                                                                                                                                                                  333 DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR
                                                                                                                                                                                                                                                                                                             INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK
                                                                                                                                              DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR
                                                                                                                                                                                                                             TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE
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TA, Suchorolski MT, Altus CM, Pitts SJ, Elder LV;
Delegeane AD, Panesar IS, Barville SC, Reddy TP;
Blanchard JL, Panzer SR, Wang X, Au AP, Geretin EH;
Anderson SB, Rioux P, Shen EJ, Wu MC, Stuve LL;
Spiro PA, Stewart EA, Wingrove J, Vitt UA, Kirton ES;
ng M, Policky JL, Hurwitz BL, Ma Y, Jackson JL, Gletze
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene therapy; human diagnostic and therapeutic polynucleotide; dithp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human diagnostic and therapeutic pprotein SEQ ID NO:5234.
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12-SEP-2002; 2002US-0410260P.
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Kwong M,
Shi X,
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Peralta CH,
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Harthshorne
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                                                                                                                                                                                                                                                             mucosal delivery; permeabilising peptide;
mucosal epithelial paracellular transport; epithelial junction;
epithelial membrane adhesive protein; junctional adhesion molecule; JAM;
occludin; claudin; sexual dysfunction; male erectile sexual dysfunction;
female sexual dysfunction; human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This invention relates to a novel composition comprising a biologically active agent and mucosal delivery-enhancing effective amount of permeabilising peptide that reversibly enhances mucosal epithelial paracellular transport by modulating epithelial junctional structure and/or physiology in a mammal. The agent of the invention inhibits homotypic binding of epithelial membrane adhesive protein chosen junctional adhesion molecule (JAM), occludin and claudin. The biologically active agent is effective for treatment of sexual dysfunction. Che example male servetile sexual dysfunction or female sexual dysfunction. The present sequence is that of the human occludin protein which is related to the invention.
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7e-216;
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al Similarity 100.0%; Pred. No. 7e-
490; Conservative 0; Mismatches
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                                                                                             ADI47189 standard; protein; 522
                                                                                                                                                                                                                        Human occludin protein sequence.
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                                                                                                                                                                                (first entry)
MVGDYDRQKT
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513
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with human molecules, e.g. cell proliferative disorders, autoimmune/inflammatory disorder, developmental disorder, endocrine disorder, neurological disorder, developmental disorders, or infections caused by virus, bacteria, fungi or paradite. The dithp molecules may also be used in genetic mapping, in identifying individuals from minute biological samples, in detecting single nucleotide polymorphisms, as molecular weight markers, and for somatic or germline gene therapy. The present sequence represents a dithp protein of the invention. Note: The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from WIPO at www.wipo.int/pct/en/sequences/listing.htm
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                                                                                                                                                                                                                                                                                                       Score 2498; DB 8; Length 508;
Pred. No. 6.6e-208;
0; Mismatches 1; Indels 14
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96.9%;
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ses 475; Conservative
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Schmidt JP, Wright RJ, Bruns CM, Marjanovic MM, Shen F; Hatchshorme TA, Suchorolski MT, Altus CM, Pittes SJ, Balder LV; Mooney EM, Delegeane AM, Panesar IS, Banville SC, Reddy TP; Stevens KA, Blanchard JL, Panzer SR, Wang X, Au AP, Gerstin EH; Peralta CM, Anderson SB, Rioux P, Shen EJ, Wu MC, Stuve LL; Lagace RE, Spiro PA, Stewart EA, Wingrove J, Vitt UA, Kirton ES; Xu Y, Kwong M, Policky JL, Hurwitz BL, Ma Y, Jackson JL, Gietzen D;

12-SEP-2002; 2002US-0410259P. 12-SEP-2003; 2003WO-US028227

(INCY-) INCYTE CORP.

Suarez CJ;

Kwong M, Po S, Shi X,

Xu'Y, Kwong Patury S, S

WPI; 2004-329368/30.

N-PSDB; ACN43638

Shen F;

New diagnostic and therapeutic polynucleotides and polypeptides, useful in diagnosing a condition, disease or disorder associated with human molecules, e.g. autoimmune or inflammatory disorders, in gene therapy or

Claim 27; Page; 190pp; English.

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301 333 361

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gene mapping.

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The invention relates to novel diagnostic and therapeutic polynucleotides selected from one of the 272 sequences defined in the specification. A polynucleotide of the invention may have a use in gene therapy. The human diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be used to diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be used to diagnostic and therapeutic polynucleotides (dithp) or polypeptides may be used to diagnostic associated with human molecules, e.g. cell proliferative disorder, endocrine disorder, neurological disorders, davelopmental disorders, or infections caused by virus, bacteria, fungi or parasite. The dithp concletus may also be used in genetic mapping, in identifying individuals from minute biological samples, in detecting single nucleotide polymorphisms, as molecular weight markers, and for somatic or germline gene therapy. The present sequence represents a dithp protein of the invention. Note: The sequence data for this patent is not represented in the printed specification, but was obtained in electronic format directly from WIPO at www.wipo.int/pct/en/sequences/listing.htm 61 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA 213 YALCNOFYTPAATGLYVDOYLYHYCVVDPOEAIAIVLGFMIIVAFALIIFFAVKTRRKMD RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN RYDKSNILMDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN 1 MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG 93 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA YALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD LVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI DB 8; 96.4%; Score 2498; DB 8; 96.9%; Pred. No. 6.6e-208; ive 0; Mismatches 1; .. Best Local Similarity 96.9 Matches 475; Conservative Similarity Sequence 508 AA; 121 181 241 33 Query Match g g 8 쉱 g 셤 ò ò 8 ò 332 360 392 240 272 420 498 300 INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480 DKRFYPESSYKSTPVPEVVQELPLISPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR YALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD RYDKSNIIMDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN YALCNGFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD RYDKSNI LWDKEH I YDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE TEODHYETDYTTGGESCDELEEDWIREYPPITSDQORQLYKRNFDTGLQEYKSLQSELDE ----SADYKSKKNHCKQLNSKLSHIKK gene therapy; human diagnostic and therapeutic polynucleotide; dithp Human diagnostic and therapeutic pprotein SEQ ID NO:5235 ¥. INKELSRLDKELDDYREESEEYM ABM84986 standard; protein; 508 490 508 MVGDYDRQKT (first MVGDYDROKT

421

453 481 499

120

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Length 508;

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152 180 212 240 272 300

332

DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR

273

Homo sapiens.

18-NOV-2004

ABM84986

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210 IYMICNQFYIPGGTGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKM 269
 93 YGTGLFGGSLNYPY--SGFG-YGGCYGGYGGYGYGYGGYTDPRAAKGFLLAMAAFCFIA 149
                                                                                                                                                                                                NDKRFYPESSYKSTP-VPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRS 358
                                                                                                                                                                                                              The present sequence represents canine occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. The present sequence is encoded by APT9973, which encodes an extra 16 amino acid residues in the correct reading frame, which are not shown in the specification. Antibodies raised against the protein are used to assay
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                           DRYDKSNILWDKEHIYDEQPPNYEEWYKNYSAGTQDMPPPPSDYAERVDSPMAYSSNGKV
                                                                                                                                                                                                                                                                                                            DEINKELSRLDKELDDYREESEBYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHI
                                                                                  IYALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRXM
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                                                                                                                                         DRYDKSN1LWDKEH1YDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKV
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96JP-00331944.
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N-PSDB; AAT97973.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The present sequence represents mouse occludin, a novel adhesion molecule which is a constituent protein of membrane tight junctions. Antibodies raised against the protein are used to assay for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent cell-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin present sequence are used for treatment of disorders involving the present sequence are used for treatment of disorders involving the blood-brain barrier. Primers that hybridise to the occludin DNA sequence can be used to detect occludin DNA by PCR.
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                                                                      -----SADYKSKKNHCKQLNSKLSHIKK 498
                                                    421 INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480
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              TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE
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                                                                                                                                                                                                                                                                                                                        Occludin; adhesion molecule; membrane tight junction; occludin localisation; membrane; occludin expression; blood-brain barrier disorder.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 90.2%; Score 2335.5; DB 2
Best Local Similarity 90.0%; Pred. No. 8.9e-194;
Matches 442; Conservative 20; Mismatches 24;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA encoding human, dog and mouse occludin(s) substances influencing occluding expression.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5; Page 20-22; 36pp; Japanese.
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                                                                       AAW36054 standard; protein; 521
                                                                                                                                                                                                                                                                                             Mouse occludin protein sequence
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96JP-00331944.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-JP000665
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                                                                                                            MVGDYDRQKT 490
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                                                                                                                              MVGDYDROKT
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12-DEC-1996;
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for occludin in samples, and for the study of occludin localisation in membranes (e.g. by immunofluorescent cell-staining). The transformants and antibodies are used for screening of substances which potentially influence occludin expression. Therapeutic polynucleotides derived from the DNA encoding the present sequence are used for treatment of disorders involving the blood-brain barrier. Primers that hybridise to the occludin DNA sequence can be used to detect occludin DNA by PCR
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                                                                                                                                                                                                                       MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLVIVMCIAIFGCVASTLAWDRG
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                                                                                                                                             90.0%; Score 2330.5; DB 2
88.8%; Pred. No. 2.3e-193;
ive 20; Mismatches 18;
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                                                                                                                                                           Local Similarity 88.8
Les 435; Conservative
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                                                                                                                   Sequence 505 AA;
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Unidentified
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29-JAN-2004
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comparison of the nucleic acid sequence. Also claimed are a vector comprising the nucleic acid sequence. Also claimed are a vector comprising the nucleic acid sequence. Also claimed are a vector comprising the nucleic acid sequence. Also comprising the vector comprising the nucleic acid sequence. Also comprising the vector comprising the nucleic acid sequence which is differentially regulated in an animal subjected to pain and a Kit to perform the method, an array, a method for identifying an agent that is differentially expression of the polymucleotide sequence which is differentially expression of a polymucleotide sequence which is differentially expressed in an animal subjected to pain, a method for identifying a compound that regulates the activity of one or more of the compound that regulates the activity of one or more of the polymucleotides, a method for identifying a paramaceutical composition, a method for identifying a compound that regulates the activity of one or more of the polymetication, a method for identifying a compound that regulates the activity in an animal of one or more of the polypeptides or their antibodies. The polymucleotide or the compound that composition comprising the one or more polymetication and a pharmaceutical composition comprising the one or more of the sequence presented is a rat protein (described in Table 3 or therapy). The sequence presented is a rat protein (described in Table 3 or the sequence data for this patent did not form part of the printed for the specification) which is differentially expressed during pain.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     invention discloses a composition comprising two or more isolated
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                                                                                                                                                                                                                                           New composition comprising two or more isolated polypeptides, useful preparing a medicament for treating pain in an animal.
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88.4%; Pred. No. 9.9e-193;
ive 26; Mismatches 28;
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                                                                                                                                                                                                                                                                                                      Example 1; Page; 1017pp; English.
                                                                                                                                                   Befort K,
               14-AUG-2001; 2001US-0312147P.
01-NOV-2001; 2001US-0346382P.
26-NOV-2001; 2001US-0333347P.
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BAYER AG.
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17-APR-2002;
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23-APR-2002;
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                                                                                                      RESULT 13
                                                                                                                     ABR5844
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This sequence represents a human occludin protein which is used in a method to isolate RNA polymerase II elongation factor ELL2 which can be used in the design of treatments for neoplastic disorders (sepecially leukaemias). Antagonists of the polymeptides or nucleic acids that inhibit the expression of the protein, can be used to inhibit ELL2 activity in a patient. A method for diagnosing or determining a susceptibility to neoplastic disorders comprises assaying ELL2 gene expression level in mammalian cells or body fluid and comparing these expression levels with a standard, such that an increase or decrease in levels indicates an increased our decreased susceptibility. The gene expression level is assayed using the antibody, or by detecting ELL2 mRNA levels. The host cells of may be used to identify compounds which bind to an ELL2
                                                                                                                                 511
418
                                                                                                   DEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHI 478
                                                                                                                                                                                                                                                                                                                                                                            ELL2; RNA polymerase II elongation factor; human; neoplastic disorder; leukaemia; inhibitor; diagnosis; susceptibility; occludin.
                                                                                                                  KRTEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RNA polymerase II elongation factor - for the prevention and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 108;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conaway RC;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    of neoplastic disorders, e.g. leukaemia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         21.9%; Score 566; DB 2; I
100.0%; Pred. No. 5.1e-41;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conaway JW,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (HUMA-) HUMAN GENOME SCI INC.
(OKLA-) OKLAHOMA MEDICAL RES FOUND.
                                                                                                                                                                                                                                                            AAW76214 standard; protein; 108 AA.
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                                                                                                                                                                                                                                                                                                                                                 Human occludin protein fragment.
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-0038447P
                                                                                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                            KKMVGDYDROKT 490
                                                                                                                                                                              Shilatifard A,
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Best Local Similarity
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 108 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
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                332
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                                                                                                                                                                                           immunomodulator; cytostatic; nootropic; neuroprotective; dyslipidaemia; antiparkinsonian; antilipaemic; gene therapy; metabolic disorder; diabetes; obesity; infection; cachexia; cancer; Parkinson's disease; neurodegenerative disorder; Alzheimer's disease; immune disorder;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOVX polypeptides and nucleic acids useful for diagnosing, preventing treating NOVX-associated disorders, e.g. diabetes, obesity, cancer or dyslipidemia, and in chromosome mapping, tissue typing or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Alsobrook JP, Anderson DW, Boldog FL, Burgess CE, Catterton E; Edinger SR, Ellerman K, Gerlach VL, Gorman L, Guo X, Ji W; Edinger SR, Leach MD, Li L, Miller CE, Patturajan M, Rieger DK; Rochenberg ME, Shimkets RA, Smithson G, Spytek KA, Taupier RJ; Vernet CAM, Voss EZ, Zerhusen BD, Zhong M;
anorectic, antibacterial, virucide;
                                                                                    Z
                                                                                    ABR58441 standard; protein; 561
                                                                                                                                                                                                                                                                                                                                                                2001US-0326483P.
2001US-0327342P.
2001US-0327917P.
2001US-0328029P.
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2001US-0329414P.
2001US-0330142P.
2001US-0341058P.
2001US-0339266P.
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2001US-0349575P.
2001US-0346357P.
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2002US-0373261P.
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                                                                                                                                 (first entry)
                                                                                                                                                                                 Human; NOV; antidiabetic;
                                                                                                                                                                                                                                             haematopoietic disorder
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Rothenberg ME, Shimne
Tam. Voss EZ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (CURA-) CURAGEN CORP.
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12-0CT-2001;
15-0CT-2001;
22-0CT-2001;
24-0CT-2001;
24-0CT-2001;
29-0CT-2001;
29-0CT-2001;
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Claim 1; Page 240; 487pp; English.

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Gaps

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Indels

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Matches 108; Conservative

383 DWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDKREESEEY

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27-MAR-2003
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                    coding sequences (ACC72075-ACC72181 and ABR58363-ABR58469). The NOV proteins are useful in manufacturing a medicament for treating a syndrome associated with a human disease. The NOV proteins and coding sequences may be used to diagnose, treat or prevent metabolic disorders such as diabetes or obesity, infections, cachexia, cancer, neurodegenerative disorders such as Alzheimer's disease or Parkinson's disease, immune disorders, haematopoletic disorders and various dyslipidaemias
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                healing;
                                                                                                                                                                           YSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRGYGTSLLGGSVG 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             forensic; nutritional source; damaged tissue; diseased tissue; myeloid cell disorder; lymphoid cell disorder; bone cartilage tissue growth; tendon tissue growth; ligament tissue growth; neve tissue growth; regeneration; wound healing tissue repair; tissue replacement; burn; incision; ulcer; cancer; human.
                                                                                                                                                                                        QPYGMGGVGGLGSMYG----GYYYTGPKTP-----FVLVVAGLAWITTIILVLGM---
                                                                                                                                                                                                                                                                                                           YALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD
                                                                                                                                                                                                                                                                                                                             YPL---FNTPVNA------VFCRVEGGQIAAMIFLFVTMIVYLISALVCLK-----
                                                                                                                                                                                                                                                                                                                                                                          -----LWRHEAARRHREYMEQQEVSDINE--------PSLSSKRKMCEMAT
                                                                                                                                                                                                                     YPYGGSGFGSYGSGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAALVIFVTSVIRS
                                                                                                                                                                                                                                                                ----VSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI
                                                                                                                                                                                                                                                                               -----DKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAY
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                                                                                                                                                       Gaps
           and their
                                                                                                                            11.2%; Score 2>1, -
22.0%; Pred. No. 3.8e-16;
tive 79; Mismatches 166; Indels 146;
          to novel human NOV proteins
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RCDYLKNKLSHIKQRIQEYDK 551
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           relates
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADI21141 standard; protein;
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                                                                                                                                                      Matches 110; Conservative
           present invention
                                                                                                                                                                                                                                                                                                                                                      RYDKSNILW-
                                                                                                                                            Local Similarity
                                                                                                            Sequence 561 AA;
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polypeptide with biological activity. The polymucleotides and polypeptides are useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders and other traits, to assess biodiversity, as nutritional sources or supplements. The polymucleotides may also be used as molecular weight markers, chromosome markers or map related gene positions, or as an antigen to raise anti-DNA antibodies or elicit immune response. The polymeptides are useful for raising antibodies, as markers for tissues in which the corresponding polypeptide is expressed, for re-engineering damaged or diseased tissues, for treating myeloid or lymphoid cell disorders, in bone cartilage, tendon, ligament and/or nerve tissue growth or requencation, in wound healing, in tissue repair and replacement, in resent sequence represents the amino acid sequence of a novel human
                                                                                                                                                                                                                                                                                                                                                                                               or treating myeloid or ligament and nerve
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                                                                                                                                                                                                                                                                                                                                                                                                                                   lymphoid cell disorders, in bone cartilage, tendon, ligament and nerve
tissue growth or regeneration, in wound healing, and in tissue repair and
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                                                                                                                                                                                                     Wang J;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              229 QPYGMGGVGGLGSMYG----GYYYTGPKTP-----FVLVVAGLAWITTIILVLGM---
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                                                                                                                                                                                                                                                                                                                                                                                                        polynucleotides and secreted proteins, useful for treating
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels 145;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The invention relates to an isolated polynucleotide encoding a
                                                                                                                                                                                                  ø,
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                                                                                                                                                                                                  J, Zhao QA,
Drmanac RT,
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                                                                                                                                                                             Ren F, Zhou P,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11.1%; Score 287.5; DB 7; 22.6%; Pred. No. 7.6e-16; ive 75; Mismatches 166;
                                                                                                                                                                                                  Zhang
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              20; SEQ ID NO 392; 156pp; English.
                                                                                                                                                                                               RW, Ren Weng G,
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                                                                                                                                                                                                  Goodrich
Wehrman T,
                                                     19-SEP-2001; 2001US-0323739P.
13-SEP-2002; 2002US-00323739.
19-SEP-2002; 2002WO-US029964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 113; Conservative
                                                                                                                                                                                                                                                                                                                    WPI: 2003-354603/33.
                                                                                                                                                                                                  Tang YT, Asundi V,
                                                                                                                                                                                                                                Ghosh M, Xue AJ,
Haley-Vicente D;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                            (HYSE-) HYSEQ INC
                                                                                                                                                                                                                                                                                                                                                     N-PSDB; ADI21857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         558 AA;
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cancer-associated nucleic acid molecules (No and proteins represent numeral color cancer-associated nucleic acid molecules (No and proteins are collectively known as colon cancer antigens have extostatic activity and can be used in gene therapy cancer antigens have extostatic activity and can be used in gene therapy and vaccine production. N and P may be used in the prevention, diagnosis and vaccine production. N and P may be used in the prevention, diagnosis and treatment of diseases associated with inappropriate P expression. For example, N and P may be used to treat disorders associated with decreased that affect the activity of P by expressing inactive proteins or to supplement the patients own production of P. Additionally, N may be used to produce the colon cancer-associated Ps, by inserting the nucleic acids into a host cell and culturing the cell to express the proteins. N and P carcinomas and cancers. Additional diagnosis and treatment of colorectal carcinomas and cancers. Additioation of the present invention. N.B. Pages 666 to 682 and page 7053 of the sequence listing were missing at time of publication, meaning no sequences are present for SEQ ID NO:1027
                         KSLQSELDEINKELSRLD---KELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKNHC 468
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nucleic acids encoding 4277 human colon cancer-associated polypeptides, useful for preventing, diagnosing and/or treating colorectal cancers.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAH32943 to AAH37195 and AAG73514 to AAG77788 represent human colon
                                                                                                                                                                                                                                                                                                                                                          colon cancer; colon cancer antigen; diagnosis; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11.0%; Score 285; DB 4; Length 91; 98.2%; Pred. No. 1e-16; ive 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                       Human colon cancer antigen protein SEQ ID NO:4875.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rosen CA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Claim 11; Page 6655-6656; 9803pp; English.
                                                                                                                                                                                                                                                                                                                                                                               colorectal carcinoma; chromosome 5.
                                                                                                                                                                                                     AAG74111 standard; protein; 91 AA.
                                                                                           530 DYLKNKLSHIKQRIQEYDK 548
                                                                      469 KQLKSKLSHIKKMVGDYDR 487
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99US-0157137P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (HUMA-) HUMAN GENOME SCI INC
                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            time of publication, m
to 1052, 7921 and 7922
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N-PSDB; AAH33542.
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                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   29-SEP-1999;
03-NOV-1999;
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412
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1 MHVRPMLSQPAXSFYPEDEILHFYKWTSPPGVIRILSMLIUWCIAIFACVASTL 55

Query Match 11.0 Best Local Similarity 98.2 Matches 54; Conservative

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36 MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIVMCIAIFACVASRL 90
                                                                               Search completed: April 1, 2005, 10:10:08 Job time : 264.168 secs
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WEST AVAILABLE COLL

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Sequence 2, Application US/09891064A
Fatent No. US20020082391A1
GENERAL INFORMATION:
APPLICANT: James M. Anderson
TITLE OF INVENTION: Human Occludin, Its Uses and Enhancement of Drug
TITLE OF INVENTION: Absorption Using Occludin Inhibitors
FILE REFERENCE: OCR-754.CIP
CURRENT APPLICATION NUMBER: US/09/891,064A
CURRENT FILING DATE: 2001-06-25
PRIOR APPLICATION NUMBER: US 09/142,732
FRIOR FILING DATE: 1998-09-15
NUMBER OF SEQ ID NOS: 6
SOFTWARE: MS DOS
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122.943 Million cell updates/sec
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2590
1 MHVRPMLSQPAYSFYPEDEI.......LKSKLSHIKKWVGDYDRQKT 490
                                                                                                                                                                                                                                                                                   April 1, 2005, 09:16:13 ; Search time 1321.59 Seconds
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1: \cgn2 \( \bigcolume{6} \) \( \text{Pubcata} \) \( \text{Pubca
GenCore version 5.1.6
Copyright (c) 1993 - 2005 Compugen Ltd.
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Maximum Match 100%
Listing first 45 summaries
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Gapop 10.0 , Gapext 0.5
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Maximum DB seq length: 2000000000
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Perfect score:
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                                                                                                                                                                                                                                                                                   Run on:
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Sequence 2, Appli	Sequence 104, App	Sequence 900, App	Sequence 8, Appli	Sequence 158, App	Sequence 4885, Ap	Sequence 78, Appl	Sequence 78, Appl	Sequence 62, Appl	Sequence 69, Appl	Sequence 62, Appl	Sequence 78, Appl	Sequence 78, Appl
SUMMARIES	US-09-891-064A-2	US-10-176-847-104	US-10-601-953-900	US-10-028-780-8	US-10-262-839-158	US-10-106-698-4885	US-09-769-145-78	US-10-105-008-78	US-10-006-869-62	US-10-193-653-69	US-10-395-032-62	US-10-425-557-78	US-10-412-701-78
	. 6	14	15	13	15	14	6	14			15		
% Query Match Length DB	522	522	522	108	561	91	48	48	48	48	48	48	48
% Query Match	100.0	100.0	100.0	21.9	11.2	11.0	10.2	10.2	10.2	10.2	10.2	10.2	10.2
Score	2590	2590	2590	266	291	285	263	263	263	263	263	263	263
Result No.	-	~	e	4	2	9	7	80	6	10	11	12	13

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YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA 120

61

1 MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG

100.0%; Score 2590; DB 9; Length 522; 100.0%; Pred. No. 4e-204; Live 0; Mismatches 0; Indels 0

Query Match 100. Best Local Similarity 100. Matches 490; Conservative

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; NAME/KEY: peptide ; LOCATION: complete sequence ; OTHER INFORMATION: human occludin US-09-891-064A-2

TYPE: PRT ORGANISM: Homo sapiens

FEATURE:

SEQ ID NO 2 LENGTH: 522

Sequence 78, Appl Sequence 1352, Ap Sequence 5, Appli		Sequence 6, Appli Sequence 7, Appli	Sequence 7, Appli Sequence 46, Appl		Sequence 1620, Ap	Sequence 248, App	٠.	Sequence 8, Appli		Sequence 421, App	Sequence 3, Appli	Sequence 1682, Ap	Sequence 3772, Ap	Sequence 4, Appli		46,	Sequence 179, App	118,	Sequence 177006,		Sequence 58518, A			Sequence 36790, A	Sequence 174945,
16 US-10-632-678-78 16 US-10-714-564A-1352 17 US-10-885-482-5	10 US-09-778-026-15 16 US-10-648-854-15	17 US-10-885-482-6	13 US-10-028-780-7 17 US-10-885-482-46	13 US-10-028-780-2	9 US-09-925-300-1626 9 US-09-731-872-248		15 US-10-094-749-1869		9 US-09-891-064A-4	15 US-10-170-385-421	9 US-09-891-064A-3	15 US-10-369-493-1682	15 US-10-104-047-3772	9 US-09-816-669A-4		16 US-10-786-720-46	17 US-10-863-332-179	9 US-09-881-752A-118		US-1	15 US-10-425-114-58518	. US-1	US-1	16 US-10-767-701-36790	
4, 4, 4, 8, 8, 8	744	4 4 9 8	621 51	640	397	397	457	20	24	564	24	944	267	264	264	264	264	154	713	387	414	5171	135	140	174
10.2	7.6	4.0	8 6.9	00 c	6 6 U 4.	6.4	6.0	6.6	5.4	5.0	4.9	4.9	4.7	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5
263 263 263	251	232	229.5 221.5	219	165	165	155	152	141	129	128	126.5	121.5	120.5	120.5	120.5	120.5	119.5	118.5	118	118	117.5	117	116.5	116.5
14 15 16	113	50	21 22	23	72	26	27	28	53	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

# ALIGNMENTS

qa	93 YGTSLLGGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGTDPRAAKGFMLAMAAFCFIAA 152	Д	273 RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN 332
Oy Bb	121 LVIFVTSVIRSEMSRTRRYYLSVIIVSALLGIMVPIATIVYIMGVNPTAQSSGSLYGSQI 180 	è a	301 DKRFYDESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGKR 360 
oy 1	181 YALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD 240 	S S	361 TEQDHYETDYTIGGESCDELEEDWIREYPPITSDQRQLYKRNFDTGLQEYKSLQSELDE 420 
2 4 B	241 RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN 300 	& 8	421 INKELSRLDVRELDDYREESEEYWAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480 
Oy Db	301 DKRFYPESSYKSTPVPEVVQELFLTSPVDDFRQPRXSSGGNFETPSKRAPAKGRAGRSKR 360 	& B	481 MVGDYDRQKT 490             513 MVGDYDRQKT 522
oy Oy	361 TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE 420 	RESULT 3 US-10-601	SULT 3 -10-601-953-900 Sequence 900, Application US/10601953
Qy da	421 INKELSRLDKELDDYREBSEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480 	що	Publication No. US20040077540A1 GENERAL INFORMATION: APPLICANT: Quay, Steven C.
Qy Db	481 MVGDYDRQKT 490            513 MVGDYDRQKT 522		TITLE OF INVENTION: Compositions And Merhods For Modularing Fryslotogy of Epithelial TITLE OF INVENTION: Junctional Adhesion Molecules For Enhanced Mucosal Delivery Of TITLE OF INVENTION: Therapeutic Compounds FILE REFERENCE: 02-03US
	r		CURRENT APPLICATION NUMBER: US/10/601,953 CURRENT FILING DATE: 2003-06-24
RESULT 2 US-10-176-847-104 ; Sequence 104, A ; Publication No. ; GENERAL INFORMA ; APPLICANT: Vei ; TITLE OF INVEN ; TITLE OF INVEN	SULT 2  10-176-847-104  Sequence 104, Application US/10176847  Sequence 104, Application US/10176847  Publication No. US20030068636A1  GENERAL INFORMATION:  APPLICANT: Velby, Petter Ole  APPLICANT: Velby, Petter Ole  TITLE OF INVENTION: COMPOSITIONS, KITS, AND METHODS FOR  TITLE OF INVENTION: IDENTIFICATION, ASSESSMENT, PREVENTION, AND THERAPY OF BREAST	PRIOR APP PRIOR FIL NUMBER OF SOFTWARE: SEQ ID NO LENGTH: TYPE: PR	
	TITLE OF INVENTION: AND OVARIAN CANCER FILE REFERENCE: MRI-039 CURRENT APPLICATION NUMBER: US/10/176,847	S-1	TION: Sy
Ø	CURRENT FILING DATE: 2002-06-21 CUMBER OF SEQ ID NOS: 112 SOFTWARE: FastSEQ for Windows Version 4.0 EQ ID NO 104 TENCHEL 5-2	Query Match Best Local Matches 49	y Match Local Similarity 100.0%; Score 2590; DB 15; Length 522; hes 490; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
; DENGIN: 322 ; TYPE: PRT ; ORGANISM: Hom US-10-176-847-104	PRT PRT SM: Homo sapiens 847-104	oy op	1 MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIWCIAIFACVASTLAWDRG 60 
Query Match Best Local Matches 49	tch al Similarity 100.0%; Pred. No. 4e-204; 490; Conservative 0; Mismatches 0; Indels 0; Gaps 0;	& ₽	61 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGGGTDPRAAKGFMLAMAAFCFIAA 120 
S S	1 MHVRPMLSQPAYSFYPEDBILHFYKWTSPPGVIRILSMLIIVMCIAIFACVASTLAWDRG 60 	& g	121 LVIFVTSVIRSEMSRTRRYVLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI 180 
ሪሪ የብ	61 YGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYGYGPRAAKGFMLAMAAFCFIAA 120 	& <del>1</del>	181 YALCNOFYTBAATGLYVDQYLYHYCVVDPQBAIAIVLGFMIIVAFALIIFFAVKTRRKMD 240 213 YALCNOFYTBAATGLYVDQYLYHYCVVDPQBAIAIVLGFMIIVAFALIIFFAVKTRRKMD 272
ςς Β	121 LVIEVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI 180 	<i>∂</i> ; 8	241 RYDKSNILMDKEHIYDEQPPNVEEWVRAVSAGTQDVESPPSDYVERVDSPMAYSSNGKVN 300 
8 %	181 YALCNOFYTPAATGLYVDOYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD 240 	<i>&amp;</i> 8	301 DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGKR 360 
٠, ٥	241 RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN 300	<i>\</i> o	361 TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQORQLYKRNFDTGLQEYKSLQSELDE 420

393 TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE 452

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APPLICANT: Zhong, Mei
TITLE OF INVENTION: THERAPEUTIC POLYPEPTIDES, NUCLEIC ACIDS ENCODING SAME, AND METHOF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FILE REFERENCE: 21402-462A

CURRENT APPLICATION NUMBER: US/10/262,839

CURRENT APPLICATION NUMBER: US/10/262,839

CURRENT APPLICATION NUMBER: US/326,483

PRIOR FILING DATE: 2002-10-01

PRIOR PELING DATE: 2001-10-09

PRIOR FILING DATE: 2001-10-09

PRIOR PILING DATE: 2002-05-16

PRIOR PILING DATE: 2002-05-16

PRIOR PELING DATE: 2002-05-16

PRIOR PELING DATE: 2001-10-09

PRIOR PELING DATE: 2001-10-09
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                              Application US/10262839
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Spytek, Kimberly,
Taupier, Raymond, jr.,
Vernet, Corine,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CuraSeqList version 0.1
                                                                                  GENERAL INFORMATION:
APPLICANT: Alsobrook, John,
APPLICANT: Boldog, Ferenc,
APPLICANT: Budgess, Catherine,
APPLICANT: Burgess, Catherine,
APPLICANT: Edinger, Shlomit,
APPLICANT: Edinger, Shlomit,
APPLICANT: Elizaman, Karen,
APPLICANT: Gerlach, Valerie,
APPLICANT: Gerlach, Valerie,
APPLICANT: Gerlach, Linda,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Patturajan, Meera,
Reiger, Daniel,
Rothenberg, Mark,
Shimkets, Richard,
                                                                US20040038877A1
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Zerhusen, Brian,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Li, Li,
Miller, Charles
                                                                                                                                                                                                                                                                                                                                                                                                                                           Kekuda, Ramesh
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Leach, Martin,
                                                                                                                                                                                                                                                                                                                                                                                       Guo, Xiaojia,
                                                                                                                                                                                                                                                                                                                                                                                                                     Weizhen,
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US-10-262-839-158
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APPLICANT:
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                                 383 DWIREYPPITSDQORQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEY 442
421 INKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKOHCKQLKSKLSHIKK 480
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CONAWAY, RONALD C.
CONAWAY, ROLLS, A New Member of an ELL Family of
RNA Polymerase II Elongation Factors
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES: 34
CORRESPONDENCE ADDRESS:
ADDRESSEE: STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
STREET: 1100 NEW YORK AVENUE, SUITE 600
CITY: WASHINGTON
STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            443 MAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKWVGDYDRQKT 490
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 MAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDRQKT 108
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: USA

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk

COMPUTER: IBW PC COMPATIBLE

COMPUTER: IBW PC COMPATIBLE

COMPUTER: IBW PC COMPATIBLE

COMPUTER: IBW PC COMPATIBLE

SOFTWARE: PATENTIN RELEASE #1.0, Version

CURRENT APPLICATION NUMBER: US/10/028,780

FILING DATE: 28-Dec-2001

CLASSIFICATION NUMBER: US/09/026,343

FILING DATE: CUNKNOWN>

APPLICATION NUMBER: US/09/026,343

FILING DATE: 19-FEB-1997

ATTORNEY/AGENT INFORMATION:

NAME: GOLDSTEIN, ORGE A

REGISTRATION NUMBER: 29,021

REFERENCE/DOCKET NUMBER: 1488.0880001

TELEEPHONE: (202) 372-2540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 21.9%; Score 566; DB 13;
Best Local Similarity 100.0%; Pred. No. 1.2e-38;
Matches 108; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LENGTH: 108 amino acids
TYPE: amino acid
STRANDEDNESS: No. US20020132329A1 Reler
TOPOLOGY: No. US20020132329A1 Relevant
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SEQUENCE DESCRIPTION: SEQ ID NO: 8:
US-10-028-780-8
                                                                                                                                                                                                                                                                                                                    Sequence 8, Application US/10028780 Publication No. US20020132329A1 GENERAL INFORMATION: DUAN, D. ROXANNE
                                                                                                                                                                                                                                                                                                                                                                                                                                              SHILATIFARD, ALI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 8: SEQUENCE CHARACTERISTICS
                                                                                                                                                     513 MVGDYDRQKT 522
                                                                                                                481 MVGDYDRQKT 490
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APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Star
APPLICANT: Gour, Barbara J.
APPLICANT: Ali, Annar
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION
FILE REPERRENCE: 100086.401D1
CURRENT APPLICATION NUMBER: US/10/105,008
NUMBER OF SEQ ID NOS: 99
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
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                                          APPLICANT: Chen, Zhigang
APPLICANT: Chen, Zhigang
APPLICANT: Machaud, Stephanie
APPLICANT: Warg, Shoameng
APPLICANT: Hu, Zengjian
TITLE OF INVENTION: PEPTIDOMIMETIC MODULATORS OF CELL ADHESION
TITLE OF INVENTION: PEPTIDOMIMETIC MODULATORS OF CELL ADHESION
FILE REFERENCE: 100086.413C1
CURRENT APPLICATION NUMBER: US/09/769,145
CURRENT FILING DATE: 2001-01-24
PRIOR APPLICATION NUMBER: US 09/491,078
PRIOR FILING DATE: 2000-01-24
NUMBER OF SEQ ID NOS: 96
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ch 10.2%; Score 263; DB 9; I
1 Similarity 100.0%; Pred. No. 3.1e-14;
48; Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; Sequence 78, Application US/10105008; Publication No. US20030065136A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sequence 62, Application US/10006869; Publication No. US20030082166A1; GENERAL INFORMATION: APPLICANT: Blaschuk, Orest W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 100.(
Matches 48; Conservative
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OTHER INFORMATION: Descri
OTHER INFORMATION: adhesi
OTHER INFORMATION: acids
  Ali, Anmar
Ni, Feng
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Matches 48; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: PRT
ORGANISM: Unknown
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US-10-105-008-78
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Publication No. US20030109690A1

GENERAL INFORMATION:

APPLICANT: Ruben et al.

TITLE OF INVENTION: Colon and Colon Cancer Associated Polymucleotides and Polypeptide
FILE REFRENCE: PADOSP1

CURRENT APPLICATION NUMBER: US/10/106,698

CURRENT FILING DATE: 2002-03-27

PRIOR APPLICATION NUMBER: US 60/157,137

PRIOR APPLICATION NUMBER: US 60/157,137

PRIOR PILING DATE: 1999-09-29

PRIOR FILING DATE: 1999-11-03

NUMBER OF SEQ ID NOS: 8564

SSOTUMARE: Parentin Ver. 3.0

LENGTH: 91
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                                  229 QPYGMGGVGGLGSMYG----GYYYTGPKTP-----FVLVVAGLAWITTIILVLGM--- 275
                                                                                                    ----VSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI 180
                                                                                                                                                                                                     181 YALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD 240
                                                                                                                                                                                                                                        365 -----LWRHEAARRHREYMEQQEVSDINE-----PSLSSKRKMCEMAT 402
                                                                                                                                                                                                                                                                                                                                                                                                           294 SSNGKVNDKRFYPESSYKSTPVPEVVQELPLISPVDDFRQPRYSSG----GNPETPSKRA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                              S----GDRQRDSEVNFKELRTAKM------KPELLSGHIPPGHIPKPI--- 440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                350 PAKGRAGRSKRTEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQ 409
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          410 EYKSLQSELDEINKELSRLD---KELDDYREESEEYMAAADEYNRLKQVKGSADYKSKKN 466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 72 YPYGGSGFGSYGSGYGYGYGYGYGGYTDPRAAKGFMLAMAAFCFIAALVIFVTSVIRS 131
                                                                                                                                                                                                                                                                                                          241 RYDKSNILW-----DKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAY 293
                                                                                                                                      276 ----SMYYRTILLDSNWWPLTEFGINVALFILYMAAAIVYVNDTN----RGGLCY----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
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Best Local Similarity 98.2%; Pred. No. 1.2e-15;
Matches 54; Conservative 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      467 HCKQLKSKLSHIKKMVGDYDR 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence 78, Application US/09769145; Patent No. US20020168761A1; GENERAL INFORMATION: APPLICANT: Gour. Barbara J. APPLICANT: Blaschuk, Orest W.
                                                                                                    132 EMSRIRRYYLSVII-----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TYPE: PRT
CORGANISM: Homo sapiens
US-10-106-698-4885
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US-10-106-698-4885
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Length 48;

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164 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 211
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                                                                                                                                                                                                                                                                                                             FEATURE:
OTHER INFORMATION: Description of Unknown Organism:
OTHER INFORMATION: Adhesion Recognition Sequence
US-10-395-032-62
                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 10.2%; Score 263; DB 15; Best Local Similarity 100.0%; Pred. No. 3.1e-14; Matches 48; Conservative 0; Mismatches 0;
                                                                                                                                                                                 SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 62
LENGTH: 48
                                                                                                                                                           NUMBER OF SEQ ID NOS: 4052
                                                                                                                                                                                                                                                        TYPE: PRT
ORGANISM: Unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM: Unknown
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APPLICANT: Symonds, James Matthew

APPLICANT: Gour, Barbara J.

TITLE OF INVENTION: CAMPOUNDS AND METHODS FOR MODULATING NONCLASSICAL
TITLE OF INVENTION: CADHERIN-MEDIATED FUNCTIONS
FILLE REPRENCE: 100086.407C7
CURRENT APPLICATION NUMBER: US/10/006,869
CURRENT FILING DATE: 2001-12-03
NUMBER OF SEQ ID NOS: 4052
SOOTWARE: PatentIn Ver. 2.0
SEQ ID NO 62
LENGTH: 48
TYPE: PRT
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Publication No. US20030109454A1
GENERAL INFORMATION:
APPLICANT: Doherty, Patrick
APPLICANT: Blaschuk, Orest W.
APPLICANT: Blaschuk, Orest W.
APPLICANT: BLAIDARA J.
APPLICANT: BOUR, Barbara J.
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING ADHESION MOLECULE
TITLE OF INVENTION: FUNCTION
FILE REFERENCE: 100086.403C2
CURRENT APPLICATION NUMBER: US/10/193,653
CURRENT FILING DATE: 2002-07-10
NUMBER OF SEQ ID NOS: 95
SOFTWARE: Patentin Ver. 2.0
SSOFTWARE: Patentin Ver. 2.0
SSOFTWARE: Patentin Ver. 2.0
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Sequence 62, Application US/10395032
Publication No. US20030229199A1
GENERAL INFORMATION:
APPLICANT: Blaschuk, Orest W.
APPLICANT: Symonds, James Matthew
APPLICANT: Gour, Barbara J.
TITLE OF INVENTION: CADHERIN-MEDIATED FUNCTIONS
FILE REPREMENT: 100866.407C9
CURRENT APPLICATION NUMBER: US/10/395,032
CURRENT PILING DATE: 2003-03-21
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OTHER INFORMATION: Description of Artificial Sequence: Solid Phase OTHER INFORMATION: Synthesis
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 10.2%; Score 263; DB 14; Length 48; Best Local Similarity 100.0%; Pred. No. 3.1e-14; Matches 48; Conservative 0; Mismatches 0; Indels
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ) OTHER INFORMATION: Description of Unknown Organism:
) OTHER INFORMATION: Adhesion Recognition Sequence
US-10-006-869-62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TYPE: PRT
ORGANISM: Artificial Sequence
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US-10-193-653-69
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                                                                                APPLICANT: Gour, Barbara J.
APPLICANT: Blaschuk, Orest W.
APPLICANT: Ali, Annar
APPLICANT: Ali, Annar
APPLICANT: Ali, Annar
APPLICANT: Ali, Annar
APPLICANT: Chen, Zhigang
APPLICANT: Mchaud, Stephanie Denise
APPLICANT: Mchaud, Stephanie Denise
APPLICANT: Mchaud, Stephanie Denise
APPLICANT: Hu, Zenjan
FILE REFERENCE: 100096.40110, APPLICANT:
CURRENT APPLICATION NUMBER: US/10/425,557
CURRENT FILING DATE: 2003-04-28
NUMBER OF SEQ ID NOS: 96
SEQ ID NO 78
SEQ ID NO 78
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APPLICANT: Michaud, Stephanie Denise
APPLICANT: Michaud, Stephanie Denise
APPLICANT: Wang, Shoameng
APPLICANT: Hu, Zengilan
TITLE OF INVENTION: PEPPIDOMIMETIC MODULATORS OF CELL ADHESION
FILE REFERENCE: 100086.413C2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
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; Sequence 78, Application US/10425557; Publication No. US20040006011A1; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 78, Application US/10412701; Publication No. US20040058864A1; GENERAL INFORMATION:
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APPLICANT: Blaschuk, Orest W.
APPLICANT: Ali, Anmar
APPLICANT: Ni, Feng
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Publication No. US20040106545A1
GENERAL INFORMATION;
APPLICANT: Blaschuk, Orest W.
APPLICANT: Gour, Barbara J.
APPLICANT: Ali, Annar
TITLE OF INVENTION: COMPOUNDS AND METHODS FOR MODULATING CELL ADHESION
FILE REFRENCE: 1000966.401C18
CURRENT APPLICATION NUMBER: US/10/632,678
CURRENT PILING DATE: 2003-08-01
NUMBER OF SEQ ID NOS: 101
SEQ ID NO 78
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OTHER INFORMATION: Description of Unknown Organism: Occludin cell
OTHER INFORMATION: adhesion recognition sequnce and flanking amino
OTHER INFORMATION: acids
US-10-632-678-78
                                                                                                                                                                                                             CTHER INFORMATION: Description of Unknown Organism: Occludin cell; OTHER INFORMATION: adhesion recognition sequnce and flanking amino OTHER INFORMATION: acids
US-10-412-701-78
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                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GVNPTAQSSGSLYGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQE 48
                                                                                                                                                                                                                                                                                                                                   Query Match 10.2%; Score 263; DB 15; Length 48; Best Local Similarity 100.0%; Pred. No. 3.1e-14; Matches 48; Conservative 0; Mismatches 0; Indels
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Publication No. US20040175361A1

GENERAL INPORMATION:

APPLICANT: Blackluk, Orest W.

APPLICANT: Blackluk, Orest W.

TITLE OF INVENITON: COMPOUNDS AND METHODS FOR MODULATING

TITLE OF INVENITON: FUNCTIONS OF NONCLASSICAL CADHERINS

FILE REFERENCE: 100086.418

CURRENT FILING DATE: 2003-11-14

NUMBER OF SEQ ID NOS: 1402

SOFTWARE: PSELSEQ for Windows Version 4.0

LENGTH, 48
CURRENT APPLICATION NUMBER: US/10/412,701
CURRENT FILING DATE: 2003-04-19
NUMBER.OF SEQ ID NOS: 96
SCOTTWARE: Patentin Ver. 2.0
SEQ ID NO 78
LENGTH: 48
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Best Local Similarity 100.0°
Matches 48; Conservative
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ORGANISM: Unknown
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US-10-714-564A-1352
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                                                                                                                                              TYPE: PRT
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Search completed: April 1, 2005, 10:03:19 Job time : 1322.59 secs

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April 1, 2005, 09:36:47; Search time 52.2335 Seconds (without alignments) 902.605 Million cell updates/sec Run on:

US-09-891-064A-2_COPY_33_522 2590 1 MHVRPMLSQPAXSFYPEDEI......LKSKLSHIKKNVGDYDRQKT 490 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

283416 seqs, 96216763 residues Searched: Total number of hits satisfying chosen parameters:

283416

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR 79:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

# SUMMARIES

Description	111111111111111111111111111111111111111	occludin - human	occludin - chicken	eleven-nineteen ly	keratin, type II c	٠,	colicin E7 (EC 3.1	keratin 6f, type I	6a,	à	probable membrane	protein B0213.6 (i	keratin 6e, type I	spindle pole body	protein B0213.5 [i	epidermal keratin	prion protein homo	conserved hypothet	protein B0213.2 [i	osteopontin precur	probable integral	voltage-gated sodi	keratin 6c, type I	chromosome-associa	glycine/tyrosine-r	casp homolog - fis	hypothetical prote	plasmid recombinat	erythrocyte membra	keratin 3, type I,
£		G02533	A49467	I38880	KRMS2	KRHU2	S22453	161771	KRHUEA	KRHUEB	S51436	A89016	161770	S26710	B89016	IS9009	JC7876	G90546	E89016	JS0638	T35435	T31340	161768	T45706	B45466	T41332	T31825	S10134	D71623	KRXL
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Length		522	504	621	581	643	576	564	564	564	386	75	564	944	69	553	180	1099	72	278	226	1699	564	1171	80	633	364	494	2441	486
% Query March		100.0	41.3	8.9	5.5	5.4	5.3	5.1	5.1	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.6	4.6	4.6	4.6	4.5	4.5	4.5	4.5
0 0 0	2000	2590	1070.5	229.5	142.5	140.5	138.5	133	131	129	128.5	127	126.5	126.5	125.5	125	123.5	123	122.5	122	121.5	120.5	119.5	119.5	118.5	118	117.5	117	116.5	115.5
Result	2	т	7	e	4	S	9	7	œ	Q	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

keratin 9, type I,	choline binding pr	hypothetical prote	hypothetical prote	peptide-aspartate	colicin E2 (EC 3.1	hypothetical prote	hypothetical prote	hypothetical prote	conserved hypothet	hypothetical prote	1mmunophilin FKBP4	hypothetical prote	transforming prote	tyro 10 receptor k	hypothetical prote
I37984	H98120	T27907	H70168	вавон	NDECE2	S51441	T19215	C87305	T08318	T21956	A55320	T25669	829923	I48859	A72287
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622 2	701	772	497	754	581	911	178	210	384	407	412	205	717	819	1170
	4.5 701														-
4.5		4.5	4.4	4.4	4.4	4.4		4.4	4.4	4.	4.4	4.4	4.4		4.4

# ALIGNMENTS

RESULT 1 G02533 occludin C;Species C;Date: 2 C;Accessi R;Van Ita submitted A;Referen A;Accessi A;Accessi A;Accessi A;Accessi A;Accessi A;Accessi A;Accessi A;Accessi C;Superfa	RESULT 1  G02533 occludin - human cc.Species: Homo sapie C; Date: 21-Dec-1996 # C; Accession: G02533 R; Van Itallie, C.M A; Reference number: H A; Accession: G02533 A; Accession: G02533 A; Accession: G02533 A; Seatus: preliminary A; Seatus: preliminary A; Seatus: preliminary A; Seatus: preliminary A; Csuperfamily: occlud C; Superfamily: occlud	RESULT 1 G0253 Goccludin - human occludin - human C; Species: Homo sapiens (man) C; Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 09-Jul-2004 C; Accession: G0253 S; Accession: G0253 S; Accession: G0253 A; Acces
Query Ma Best Loc Matches	Query Match Best Local Sim Matches 490;	. Match Local Similarity 100.0%; Pred. No. 9.6e-163; Les 490; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
& 8	33 H	MHVRPMLSQPAYSFYPEDEILHFYKWTSPPGVIRILSMLIIVWCIAIFACVASTLAWDRG 60 
& 8	61 Y 93 Y	YGTSLIGGSVGYPYGGSGFGSYGSGYGYGYGYGYTDPRAAKGFMLAMAAFCFIAA 120 
<b>상</b> 원	121 L       153 L	LVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQI 180 
ò a	181 Y       213 Y	YALCNOFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMD 240 
ò 8	241 R 273 R	RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDSPMAYSSNGKVN 300 
<i>ት</i> ස	301 D 333 D	DKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRAPAKGRAGRSKR 360 
& g	361 T 393 T	TEQDHYETDYTTGGESCDELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDE 420 
<i>ò</i> 93	421 I 453 I	INKELSRLDKELDDYREESEEVWAAADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKK 480 

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Gaps

41;

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556 487

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C, Accession: A02951
R, Steinert, P.M.; Parry, D.A.D.; Idler, W.W.; Johnson, L.D.; Steven, A.C.; Roop, D.R.
R, Steinert, P.M.; Parry, D.A.D.; Idler, W.W.; Johnson, L.D.; Steven, A.C.; Roop, D.R.
A, Title: Amino acid sequences of mouse and human epidermal type II keratins of M-r 67,00 iate filament subunits.
                                                                                                                                                                                                                                                                                                                                                                                    279 PPSDYVERVDSPMAYSSNGKVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSS 338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        G----SPSRSKPKKKSKKHKDKERAAEDKPRAQLPDCAPATHATPGAPADTPGLNGTCSV 496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              379 -----ELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKE 431
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          keratin, type II cytoskeletal - mouse (fragment)
N/Alternate names: 67-kDa type II keratin
CiSpecies: Mus musculus (house mouse)
CiSpecies: Mus musculus (house mouse)
CiSpecie: 04-Dec-1986 #sequence_revision 04-Dec-1986 #text_change 09-Jul-2004
                                                                                                                                                                                                                                                                                                                                                                                                                  |:::| :: | :: | :| :| :| | SSVPTSTSETPDYLLKYAAISSSEQRQSYKNDFNAEYSEYRDLHARIERITRRFTQLDAQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LDDYREESEEYMAA----ADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIKKMVGDYDR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     39 GGNFETPSKRAPA-----KGRAGRSKRTEQ--DHYETDYTTGGESCD------
                                                                                           A;Residues: 1-621 <RES>
A;Residues: 1-621 <RES>
A;Cross-references: UNIPROT:P55199; EMBL:U16282; NID:g601792; PID:g601793
A;Experimental source: fetal brain cDNA library (commerically prepared)
C;Genetics:
A;Genetics: GDB:ELL
A;Cross-references: GDB:450204
A;Cross-references: GDB:450204
A;Map position: 19p13.1-19p13.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Modecule type: mRNA
A; Residues: 1-581 & STE>
A; Crose zeferences: UNIPROT: P04104; GB: M10937; NID: g198622; PID: g387396
A; Crose zeferences: UNIPROT: P04104; GB: M10937; NID: g198622; PID: g387396
C; Superfamily: cytoskeletal keratin
C; Keywords: coiled coil; intermediate filament
E; 1-10, Footboal: head (fragment)
E; 71-106/Region: H1 subdomain (fragment)
E; 71-106/Region: coil 1A
E; 107-141/Region: coil 1A
E; 122-153/Region: linker 1
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A; Reference number: I38880; MUID:95083651; PMID:7991593
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                                                                                                                                                                                                                                                                                                                                       95;
                                                                                                                                                                                                                                                                                           DB 2;
                                                                                                                                                                                                                                                                                        Score 229.5; DB 2
Pred. No. 1.7e-07;
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                                                                                                                                                                                                                                                                                                                                     38; Mismatches
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subdomain
and E2 subdomains
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Best Local Similarity 28.1.
Best Local Similarity 28.1.
Chee 68; Conservative
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                           A, Accession: 138880
A, Status: preliminary
                                                                          A; Molecule type: mRNA
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F,272-290/Region:
F,291-298/Region:
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C;Date: 01-Mar-1996 #sequence_revision 01-Mar-1996 #text_change 09-Jul-2004
C;Accession: I38880
R;Thirman, M.J.; Levitan, D.A.; Kobayashi, H.; Simon, M.C.; Rowley, J.D.
Proc. Natl. Acad. Sci. U.S.A. 91, 12110-12114, 1994
A;Title: Cloning of ELL, a gene that fuses to MLL in a t(11;19) (q23;p13.1) in acute myell
                                                                                                                                                                                          C;Species: Gallus gallus (chicken)
C;Species: Gallus gallus (chicken)
C;Accession: 344947
B;Puruse, M; Hirase, T; Itoh, M; Nagafuchi, A; Yonemura, S;; Tsukita, S;
C;Accession: A49467
B;Puruse, M; Hirase, T; Itoh, M; Nagafuchi, A; Yonemura, S;; Tsukita, S;
C;Call Biol. 123, 1777-1788, 1993
A;Title: Occludin: a novel integral membrane protein localizing at tight junctions.
A;Reference number: A49467; MuID:94103332; PMID:8276896
A;Accession: A49467
A;Accession: A49467
A;Status: preliminary
A;Residues: 1-504 <FUR>
A;Residues: 1-504 <FUR>
A;Residues: 1-504 <FUR>
A;Cross-references: UNIPROT:Q91049; GB:D21837; NID:9464148; PIDN:BAA04865.1; PID:g540494
C;Superfamily: occludin
C;Keywords: liver; membrane protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    416
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                88 GAYGTGLGGFYGSNYYGSGLSYSYGYG-GYYGGVNQRTANGFMIAMAVLCFLAQLGLLVA 146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                127 SVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGSQIYALCNQ 186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              187 FYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKTRRKMDRYDKSN 246
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          207 AY----GSTYLNQYIXHYCTVDPQEAVAAVCGFLIVILLCLICFFAQKTRSKIWRYGKAN 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     263 İYWDRAPVVQE-GPDVBEWVKNVADGASVQDETATLAYSEKPİSPVAAPPYSY---VPPP 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         291 MA-YSSNGKVNDKRFYPESSYKSTPVPEVVQELPLTSPVDDFRQPRYSSGGNFETPSKRA 349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       319 SAGYYPSGTYSSRGDQPDRALSASPV-------HGEBEEKGKDQ 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  350 PAK--GRAGRSKR----TEQDHYBTDYTTGGESCDEL-BEDWIREYPPITSDQQRQLYKR 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   403 NFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMAAADEYNRLKQVKGSADYK 462
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                                                                                                                                                                        occludin - chicken
C;Species: Gallus gallus (chicken)
C;Date: 03-May-1994 #sequence_revision 03-May-1994 #text_change 09-Jul-2004
C;Accession: A49467
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SPPPGSYYVDDAPQLFYKWTSPPGAVRGLQAGVLVLCIAIFACVASTLAWDYGYG---LG
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           247 ILWDKEHIYDEOPPNVEEWVKNVSAG------TQDVPSPPSDYVERVDSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            59;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 504;
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          72; Mismatches 145; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        41.3%; Score 1070.5; DI 45.3%; Pred. No. 7e-63;
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Matches 229; Conservative
                                               MVGDYDROKT
    MVGDYDROKT
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Best Local Similarity
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two typ
            type II
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          118 IAALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYG 177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ------NVEIDPEIOKVKSRER 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  181 EQIQSLANQFAS------FIDKVRF-----LEQQNQV---------LQTKW 211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RKMDRYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSDYVERVDS-----P 290
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WVEDYRNKYEDEINKRTNAENEFVTIKKDVDGAYMTKVDLQAKLDNLQQEIDFLTALYQA 320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ----RYSSGGNFETPSKRAPAKGR----AGRSKRTEQDHYETDY---- 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ELSOMOTQISETNVILSMDNNRQFDLDSIIAEVKAQNEDIAQKSKAEAESLYQSKYEELQ 380
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            and two
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        atin IF protein subunit appears to be a heterotetramer of two type I and t
C;Comment: Keratin 1 is expressed in terminally differentiating epidermis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MAYSSNGKVND---KRFYPESSY---KSTPVPEVVQELPLTSPVDDFRQP-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             106 GFGGGGIGGGFGSGGGFG--GGGFGGGGGYGGGYGPVCSPGGIQ----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 643;
                                                                                                                                                                                                         A,Map position: 12q11-12q13
A,Note: defects in this gene may result in epidermolytic hyperk
A,Note: defects in this gene may result in epidermolytic hyperk
C,Complex: heterotetramer of two type I, usually keratin 10 (se
C,Superfamily: cytoskeletal keratin
C,Keywords: coiled coil; heterotetramer; intermediate filament
F;4-179/Domain: head <HED> ubdomains
F;4-144/Region: HI subdomain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    colicin E7 (EC 3.1.21.-) - Becherichia coli plasmid ColE7-K317 C. Species: Bscherichia coli C. Species: Bscherichia coli C. Date: Obec.1992 #sequence_revision 24-Apr-1998 #text_change C; Date: Obec.1992 #sequence_revision 24-Apr-1998 #text_change C; Accession: S22453; S49179 R; Scong, B.W.; Lu, F.M.; Chak, K.F. Mol. Gen. Genet. 233, 177-183, 1992 Mol. Gen. Genet. 233, 177-183, 1992 Mylt.Le: Characterization of the cea gene of the ColE7 plasmid. A; Reference number: S22453; MUID:92293113; PMID:1603061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5.4%; Score 140.5; DB 1;
19.3%; Pred. No. 0.13;
tive 66; Mismatches 151;
                                                                                                                                                                       A; Cross-references: GDB:128198; OMIM:139350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       493-512/Region: H2 subdomain
513-643/Region: V2 and B2 subdomains
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     92; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;493-643/Domain: tail <END>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F;215-226/Region: linker 1
F;227-327/Region: coil 1B
F;328-344/Region: linker 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F;180-492/Domain: rod <ROD>
F;180-214/Region: coil 1A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 F;364-371/Region: linker 2
F;372-492/Region: coil 2B
F;430/Region: stutter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2A
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Best Local S:
Matches 92
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A, $Experimental source: tissue neonatal foreskin
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A, $Experimental source: tissue neonatal foreskin
A, $Experimental source: tissue neonatal tissue
C=1, 70, 821-828, 1992
A, $Experimental forestin not keratin 1 causes epidermol
A, $Experimental and $A$342; MUD:92386601; PMID:1381288
A, $Experimental and $A$342; MUD:92386601; PMID:1381288
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A, $Experimental and $A$342; MUD:92386601; PMID:1381288
A, $Experimental and microfibrillar keratins are classified into two types; the Comment: The cytoskeletal and microfibrillar keratins are classified into two types; the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal and microfibrillar for the cytoskeletal
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A;Accession: A02950
A;Molecule type: mRNA
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'S',638-643 <STE>
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Cipate: 04-Dec-1986 #sequence revision 22-Oct-1999 #text_change 10-Dec-1999
CiAccession: A22940; A02950; Ā43184
Froc. Natl. Acad. Sci. U.S.A. 82, 1896-1900, 1985
A;Accession: A22940; MUD:85166239; PMID:2580302
A;Accession: A22940; MUD:85166239; PMID:2580302
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                                                                                 GYGTSLIGGSVGYPYGGSGF-GSYGSGYGYGYGYG---YGGYTDPRAAKGFMLAMAAF 115
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    390 PITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMAAADEY 449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   322 MEISELNRMIQR-------LRSEIDGCKKQISQIQQNINDAEQRGEK--ALKDAQ 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  271 ----FDLDGIISEVKAQYDSICQRSKAEAETFYQSKYEELQITAGKHGDS-----VRNTK 321
                                                                                                                            29 GFGGGSFGGG---GFGGSGFGGGSGGGFGSGGGFGGRFGGRFGGYGPVCSPSGIOEVTLNO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----WELLOQVDTTTRT-QNLDPFFENY----ISIL-----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |:| :: : | | :: | 368 NXLNEIEDALSQCKEDCARLLCDFQELMNTKLALDMEIGTYKKGLL 412
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Alternate names: 67K type II epidermal keratin; cytokeratin 1
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    74;
    Conservative
95;
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A, Molecule type: DNA
A, Residues: 1-564 < TAK>
                A;Residues: 1-564 <RES>
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A; Accession: S22453
A; Molecule type: DNA
A; Residues: 1.576 <800>
A; Cross-references: UNIPROT: Q47112; EMBL: M62409; NID: g144174; PIDN: AAA98054.1; PID: g1443
A; Note: the authors translated the codon GAA for residue 366 as Phe
R; Lau, P.C.K.; Parsons, M.
submitted to the EMBL Data Library, December 1991
A; Description: Nucleotide sequence encoding the immunity and lysis proteins and the carb
A; Reference number: S49176
A; Rocession: S49176
A; Molecule type: DNA
A; Residues: 371-576 <1AU>
A; Molecule type: DNA
A; Residues: 371-576 <1AU>
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Keratin 6f, type II - human

C;Species: Homo sapiens (man)

C;Species: 24-May-1996 #sequence_revision 24-May-1996 #text_change 09-Jul-2004

C;Accession: 161771

C;Accession: 161771

J; Biol. Chem. 270, 18581-18592, 1995

A;Tatheren number: A57398; MUID:95355491; PMID:7543104

A;Accession: 161771

A;Status: translated from GB/EMBL/DDBJ
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134 ILPSEIÄKDDPNMMSKIVTSL----PÄETVTNVQVSTLPLDQATVSVTKRVTDVVKÖT 187
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ------PVYVSVTDVLTP---AQVKQRQDEEKRLQQEWNDAHPVEVAERNYEQARAE 324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      325 LNQANKD-----VARNQERQA-----KAVQVYNSRKSELDAANKTLADAKAEIKQFE 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17 GGNINGGPTG--LGGNGGASDGSGWSSENNPWGGGSGSGVHWGGGSGHGNGGGNSNSGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              230 VKGLPVSTTLPRGITEDKGRTAVPAGFTFGGGSHEAVIRPPKESGQK------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     377 CDELEEDWIREYPPITSDQORQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5.3%; Score 138.5; DB 1; Length 576; 21.4%; Pred. No. 0.15; tive 56; Mismatches 192; Indels 141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 GTSLLGGSVGYPYGGSGFGSYGSG------
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 5.3%
Best Local Similarity 21.4%
Matches 106; Conservative
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A;Cross-references: GB:000269; ND:934068; PIDN:CAA24760.1; PID:934069
C;Comment: The cytoskeletal and microfibrillar keratins are classified into two types, t
atin IF protein subunit appears to be a heterotetramer of two type I and two type II pro
          PIDN: AAC41771.1; PID: 9908805
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variab
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                                                                                                                                                                                                                                                                                                                               22;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      217 YINNLRRQLD----NIVGERGRL-DSELRNMQDLVEDLKNKYEDEINKRTAARENTL 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       117 FIAALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYI-MGVNPTAQSSGSL 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                163 BREQIKTLINNKFAS-----FIDKVRFLEQQNKVLDTKWTLLQEQGTKTVRQNLEPLFEQ 216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       231 FAVKTRRKMDRYDKSNILMDKEHIYDEQPPNVEEWVKNVSAGTQDV----PSPPSDYVE- 285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             286 RVDSPMAYSSNGKVNDKR-------FYPESSYKSTPVPEVVQELPLTSPVDDFR 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           333 QPRYSSGGNFETPSKRAPAKGR----AGRSKRTEQDHYETDY----TTGGESCDELEEDW 384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ----DNNRNLDLDSIIAEVKAQYEEIAQRSRAEAESWYQTKYEELQITAGRHGDDLR--- 375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   keratin 6a, type II - human

NyAlternate names: 56-kDa type II keratin; keratin cytoskeletal

C;Species: Homo sapiens (man)

C;Species: Howorel984 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004

C;Accession: A57398; A02944

R;Takahashi, K; Paladini, R.D.; Coulombe, P.A.

J;Bol. Chem. 270, 18581-18592, 1995

A;Title: Cloning and characterization of multiple human genes and cDNAs encotal A;Reference number: A57398; MUID:95355491; PMID:7543104

A;Accession: A57398
                                                                                                                                                                                                                                                                                                                                                                                                    60 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYG---YGGYTDPRAAKGFMLAMAAFC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -----PVCPPGGIQEVTVNQSLLTPLNLQIDPAIQRVRAE
                                                                                                                                                                                                                                                                                                                                                                                                                                        385 IREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    176 YGSQIYALCNQFYTPAATGLYVDQYLY---HYCVVDPQEAIAIVLGFMIIVAFALIIF--
                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                      ; Score 133; DB 2; Length 564;
; Pred. No. 0.34;
83; Mismatches 161; Indels 120;
A;Cross-references: UNIPROT:P48669; GB:L42612; NID:g908804; C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               420 LKDAKNKLEGLE-DALQKAKQDLARLIKEYQELMNVK 455
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       445 AADEYNRLKOVKGSADYKSKKNHCKOLK--SKLSHIK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A;Status: translated from GB/EMBL/DDBJ
                                                                               A,Gene: KRT6F
A,Note: this may not be a distinct g
C,Superfamily: cytoskeletal keratin
C,Keywords: coiled coil
                                                                                                                                                                                                                                                              5.1%;
                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 20.4%;
Matches 93; Conservative
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F;348-355/Region: linker 2
F;356-476/Region: coil 2B
F;414/Region: stutter
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Matches 93; Conserv
                                                                                                                                                                                                                                                                                A; Gene: GDB: KRT6B
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KRHUBB
Keratin 6b, type II - human
N;Alternate names: 56K type II keratin; keratin, cytoskeletal
C;Gpecies: Home sapiens (man)
C;Date: 04-Dec-1986 #sequence_revision 15-Oct-1999 #text_change 09-Jul-2004
C;Accession: 161767; A02945
C;Accession: 161767; A02945
R;Takahashi, K.; Paladini, R.D.; Coulombe, P.A.
J Biol. Chem. 270, 18581-18592, 1995
A;Ttle: Cloning and characterization of multiple human genes and cDNAs encoding highly A;Reference number: A57398; MUD:95355491; PMID:7543104
A;Accession: 161767
A;Accession: 161767
A;Residues: translated from GB/EMBL/DDBJ
A;Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       205
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   60 GYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYGYGYG---YGGYTDPRAAKGFMLAMAAFC 116
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      117 FIAALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYI-MGVNPTAQSSGSL 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 176 YGSQIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKT 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ------RRKWD-----RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAG 272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          206 VRQNLEPLFEQYINNLRRQLDSIVGERGRLDSE--LRGMQDLVEDFKNKYEDEINKRTAA 263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               264 ENBFVTLKKDVDAAYMNKVELQAKADTLTDEINFLRALYDAELSQMQTHISDTSVVLSM- 322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     326 SPVDDFRQPRYSSGGNFETPSKRAPAKGR----AGRSKRTEQDHYETDY----TTGGESC 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ------DNNRNLDLDSIIAEVKAQYEEIAQRSRAEAESWYQTKYEELQVTAGRHG 371
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       378 DELEEDWIREYPPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYRE 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DDLR------NTKQEIAEIN----RMIQRLRSEIDHVKKQCANLQAAIADAEQ 414
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163 EREQIKTLINNKFAS------FIDKVRF-----LEQQNKV------LETKWTLLQEQGTKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82 GYG-SRAGGSYGFGGAGSGFG-FGGGAGIGFGLGGGAGLAGGFGG----GF------
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                273 TODVPSPPSD----YVERVD-SPMAYSSNGKVNDKR--FYPESSYKSTPVPEVVQELPLT
                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 20.3%; Pred. No. 0.46; Similarity 20.3%; Pred. No. 0.46; Similarity 20.3%; Pred. No. 0.46; Similarity 78; Mismatches 158; Indels 134;
             Introns: 180/3; 252/2; 272/3; 304/3; 359/3; 401/3; 475/2; 487/1

;Introns: 180/3; 252/2; 272/3; 304/3; 359/3; 401/3; 475/2; 487/1

;Superfamily: cytoskeletal keratin

;Keywords: coiled coil; intermediate filament

;2-126/Romain: head «HED»

;12-126/Region: H1 subdomains

;127-163/Region: H1 subdomain

;162-476/Domain: rod «ROD»

;199-210/Region: linker 1

;211-311/Region: coil 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    438 ESEEYMAAADEYNRLKQVKGSADYKSKKNHCKQLK--SKLSHIK 479
GDB:128111; OMIM:148041
                                                                                                                                                                                                                                                                                                                                        F;477-564/Domain: tail <END>
F;477-496/Region: H2 subdomain
F;497-564/Region: V2 and E2 subdomains
                                                                                                                                                                                                                                                       ;329-347/Region: coil 2A
;348-355/Region: linker 2
;356-476/Region: coil 2B
;414/Region: stutter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94;
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local S:
Matches 94
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A;Cross-references: UNIPROT:P04259; GB:L42584; NID:g908780; GB:L42585; NID:g908781; GB:J786; GB:L42591; NID:g908781; GB:L42592; NID:g908788; PIDN:AAC41768.1; PID:g908790
R;Tyner, A.L.; Eichman, M.J.; Puchs, E.
Proc. Natl. Acad. Sci. U.S.A. 82, 4683-4687, 1985
A;Title: The sequence of a type II keratin gene expressed in human skin: conservation on A;Reference number: A02945; MUID:85270392; PMID:2410904
                                                                                                                                                                                                                                                                             A;Molecule type: DNA
A;Residues: 2-88, 'AG', 91-115,' PA',118,' LC',122-158,' IG',161-254,' V',256-564 <TYN>
A;Residues: 2-88,' AG', 91-115,' PA', 118,' LC', 122-158,' IG', 161-254,' V', 256-564 <TYN>
A;Cross-references: GB:M11229; GB:L00205; NID:g186714; PIDN:AAA59466.1; PID:g386849
A;Note: initiator Met not shown
C;Comment: There are two types of cytoskeletal and microfibrillar keratin, I (acidic) ar
C;Comment: There are two types of cytoskeletal and microfibrillar keratin, I (acidic) ar
C;Comment: GB:Molecular Application of a least one
C;Genetics:
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          117 FIAALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYI-MGVNPTAQSSGSL 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176 YGSQIYALCNQFYTPAATGLYVDQYLY---HYCVVDPQEAIAIVLGFMIIVAFALIIF-- 230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ---YVERVD-SPMAYSSNGKVNDKR--FYPESSYKSTPVPEVVQELPLTSPVDDFRQPRY 336
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                389 PPITSDQQRQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEEYMAAADE 448
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A;Map position: 12pter-12gter
A;Introns: 180/3; 252/2; 272/3; 304/3; 359/3; 401/3; 475/2; 487/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 564;
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424 KNKLEGLE-DALQKAKQDLARLLKEYQELMNVK 455
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C; Keywords: coiled coil; intermediate filament
F; 2-163/Domain: bead odls:
F; 2-17/Region: B1 and V1 subdomains
F; 128-163/Region: H1 subdomain
F; 164-476/Domain: rod odls:
F; 169-210/Region: coil 1A
F; 193-210/Region: coil 1B
F; 129-310/Region: coil 2A
F; 129-347/Region: coil 2A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      F;477-564/Domain: tail <END>
F;477-496/Region: H2 subdomain
F;497-564/Region: V2 and E2 subdomains
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A; Title: The NUF1 gene encodes an essential coiled-coil related protein that is a potent
                                                                                                                                                                                J. Biol. Chem. 270, 18581-18592, 1995
A;Title: Cloning and characterization of multiple human genes and cDNAs encoding highly A;Reference number: A57398; MUID:95355491; PMID:7543104
A;Accession: I61770
A;Accession: Icanslated from GB/EMBL/DDBJ
A;Acceule type: mRNA
A;Residues: 1-564 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Cross-references: UNIPROT: P48668; GB: L42611; NID: 9908802; PIDN: AAC41770.1; PID: 9908803
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  127
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | : | : | : | : | : | 285 QAKADTLITDEINFLRALYDAELSQMQTHISDTSVVLSM-------DINRNLDLDS 332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      333 IIAEVKAQYEEIAQRSRAEAESWYQTKYEELQVTAGRHGDDLR-------NTKQE 380
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93
                                                                C;Species: Homo sapiens (man)
C;Date: 24-May-1996 #sequence_revision 24-May-1996 #text_change 09-Jul-2004
C;Accession: 161770
A;Takahashi, K.; Paladini, R.D.; Coulombe, P.A.
J. Biol. Chem. 270, 18581-18592, 1995
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NiAlternate names: protein D9476.3; protein YDR356w
NiAlternate names: protein D9476.3; protein YDR356w
C;Species: Saccharomyces cerevisiae
C;Species: Saccharomyces cerevisiae
C;Accession: S26710, S34288; A49455; S61152
C;Accession. C.; Copeland, C.S.; Snyder, M.
J. Cell Biol. 116, 1319-1332, 1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              245 SNILWDKEHIYDEQPPNVEEWVKNVSAGTQDV----PSPPSDYVE-RVDSPMAYSSNGKV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   131 SEMSRTRRYYLSVIIVSAILGIMVFIATIVYI-MGVNPTAQSSGSLYGSQIYALCNQFYT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ----FIDKVRFLEQQNKVLDTKWTLLQEQGTKTVRQNLEPLFEQYINNLRRQLD----
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  34 SSISVSRSRGSGGLGGACGGAGFGSRSLYGLGGSKRISIGGGSCAISGGYGSRARGSYGF
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels 157;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 564;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94 GGAGSGFGFGGGAGIGFDLGGGAGLAGGFGGP----GF---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; Score 126.5; DB 2;
; Pred. No. 0.91;
88; Mismatches 163;
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Best Local Similarity 18.9%
Matches 95; Conservative
                                                  type II - human
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C; ppercise; campointablitis eregans
C; percises campoints of the certain of the certain of the certain of the certain of the certain of the nematode C. elegans: a platform for investigating biolog A; Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog A; Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog A; Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog A; Title: Genome sequence of the nematode C. elegans; and www.sanger.ac.uk/Projects/Cele A; Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and A; Accession: A89016
A; Accession: A89016
A; Ascession: A89016
A; Residues: 1-75 cSTO
C; Genetics: 1-75 cSTO
C; Genetics: 1-75 cSTO
A; Cross-references: UNIPROT: O44662; GB: chr_V; PIDN: AAC47927.1; PID: g2736483; GSPDB: GNOOG A; Genetics: B0213.6
A; Map position: 5
                                                                                                                                                               Appearance of the EMBL Data Library, November 1994
submitted to the EMBL Data Library, November 1994
submitted to the EMBL Data Library, November 1994
submitted to the EMBL Data Library, November 1994
submitted to the EMBL Data Library, November 1994
A, Reference number: S51414
A, Molecule type: DNA
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                                                             Species: Saccharomyces cerevisiae
Date: 23-Feb-1995 #sequence_revision 12-May-1995 #text_change 09-Jul-2004
Accession: S51436
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C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
C;Accession: A89016
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Pred. No. 0.073;
Pred. no. no. news... 15; Indels 14;
lw - yeast (Saccharomyces cerevisiae)
protein L9470.1
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          probable membrane protein YLR191w N.Alternate names: hypothetical pr
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YGYGYGGY 99
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A; Residues: 1-553 < RES>
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A;Molecule type: DNA
A;Residues: 1-69 <STO>
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                   A; Accession: B89016
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A,Cross_references: UNTPROT:P32380; EMBL:Z11582; NID:94069; PIDN:CAA77668.1; PID:94070
A,Note: the authors translated the codon GAG for residue 206 as Asp and CTG for residue
B;Kilmartin, J.V.; Dyos, S.L.; Kershaw, D.; Finch, J.T.
B;Description: A spacer element in the Saccharomyces cerevisiae spindle pole body whose
A;Reference number: S34287
A;Reference number: S34287
A;Residues: 1-944 cKIL>
A;Residues: 1-944 cKIL>
A;Residues: 1-944 cKIL>
A;Residues: 1-944 cKIL>
A;Residues: 1-94 cKIL>
A;Rilmartin, J.V.; Dyos, S.L.; Kershaw, D.; Finch, J.T.
Cell Biol. 123, 1175-1184, 1993
A;Title: A spacer protein in the Saccharomyces cerevisiae spindle pole body whose transc A;Reference number: A49455; MUID:94064779; PMID:7503995
A;Reference number: A49455
A;Residues: 1-22 cKI2>
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Cispedies: Caenorhabditis elegans
Cipate: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
Cipate: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
Cipate: 10-May-2001 #sequence_revision 10-May-2001 #text_change 09-Jul-2004
Cipate: Caenome sequence of the nematode C. elegans: a platform for investigating biolog
A; Title: Genome sequence of the nematode C. elegans: a platform for investigating biolog
A; Reference number: A75000; MUID:99069613; PMID:9851916
A; Note: see websites genome.wustl.edu/gsc/C_elegans/ and www sanger.ac.uk/Projects/C_ele
A; Note: published errata appeared in Science 283, 35, 1999; Science 283, 2103, 1999; and
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Albescription: The sequence of S. cerevisiae cosmid 9476.
Albescription: The sequence of S. cerevisiae cosmid 9476.
Albescription: S61148
Albescription: S61152
Albescription: S61152
Albescription: S61152
Albescription: BMBL: U28372; NID: 9849170; PID: 9849173; MIPS: YDR356w
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A; Reference number: $26710; MUID: 92176232; PMID:1541631
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C;Species: Caenorhabditis elegans
C;Date: 10-May-2001 #sequence_revision 10-May-2001 #
C;Accession: B89016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.9%; Score 126.5; 20.9%; Pred. No. 1.7; tive 48; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    407 GLQEYKSLQSELDEINKELSRLDKELD---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 20.9% Matches 61; Conservative
                                                          A;Accession: S26710
A;Molecule type: DNA
A;Residues: 1-944 <MIR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100
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A;Cross-references: UNIPROT:044663; GB:chr_V; PIDN:AAC47928.1; PID:g2736484; GSPDB:GN00C
Gentation:
A;Gene: B0213.5
A;Map position: 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Cross-references: UNIPROT:P50446; GB:K02108; NID:g198634; PIDN:AAA39395.1; PID:g293686 R;Finch, J.; Andrews, K.; Krieg, P.; Fuerstenberger, G.; Slaga, T.; Ootsuyama, A.; Tanoc Carcinogenesis 12, 1519-1522, 1991 A;Title: Identification of a cloned sequence activated during multi-stage carcinogenesiz A;Reference number: A61205; WUID:91316763; PMID:1713533
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 epidermal keratin subunit II - mouse
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Accession: I59009; A61205
R;Steinert, P.M.; Parry, D.A.D.; Raccosin, E.L.; Idler, W.W.; Steven, A.C.; Trus, B.L.;
R;Steinert, P.M.; Parry, D.A.D.; Raccosin, E.L.; Idler, W.W.; Steven, A.C.; Trus, B.L.;
A;Title: The complete cDNA and deduced amino acid sequence of a type II mouse epidermal A;Reference number: I59009; MUID:85014838; PMID:6207530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60 GYGTSLLGGSVGYPYGGS-GFGSYGSGYGYGYGYGYGTDPRAAKGFMLAMAAFCFI 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         71 GGGSCGIGGGGKRFGGSFGIGG-GAGSGFGFGGGAGFGG------GYGGAGFPVCPL 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              119 AALVIFVTSVIRSEMSRTRRYYLSVIIVSAILGIMVFIATIVYIMGVNPTAQSSGSLYGS 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              122 GGI-----NLQIDPTIQRVRTEERE 154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QIYALCNQFYTPAATGLYVDQYLYHYCVVDPQEAIAIVLGFMIIVAFALIIFFAVKT-RR 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KMD------RYDKSNILWDKEHIYDEQPPNVEEWVKNVSAGTQDVPSPPSD---- 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         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1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 | 1
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 257 VTLKKDVDAAYMIKVELQAKADSLTDDINFLRALYEAELSQMQTHISDTSVVLSMVNNRS 316
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    45
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    32 VIRILSMLIIVMCIAIFACVASTLAWDRGYGTSLLGGSVGYPYGGSGFGSYGSGYGYGYG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
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20.4%; Pred. No. 1.1;
cive 79; Mismatches 148; Indels 148;
                                                                                                                                                                                                                                                                                                                                                                           69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    14; Indels
                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                           8
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                                                                                                                                                                                                                                                                                                                                                            4.1%; Score 125.5; DB 44.1%; Pred. No. 0.083; Itive 9; Mismatches 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A;Gene: KER2
C;Superfamily: cytoskeletal keratin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      96; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
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RYSSGC	317 LVLDSIIAEVKAQFEVIAQRSRAEAESLYQTKYEELQVTAGRHGDDL- 363	382 EDWIREYPPITSDQORQLYKRNFDTGLQEYKSLQSELDEINKELSRLDKELDDYREESEE 441	RNTKQEIAEINRMIQRLRSEIDHVKKQCAN 393	442 YMAA-ADEYNRLKQVKGSADYKSKKNHCKQLKSKLSHIK 479	394 LQAAIADAEQRGEMALKDARGKLEGLEDALQKAKQDMAMLLKEYHELMNVK 444
322 1	317	382 1	364	442	394 1
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Search completed: April 1, 2005, 10:16:10 Job time : 55.2335 secs